

United States Government

Department of Energy

Albuquerque Operations Office

Kirtland Area Office

memorandum

DATE: December 10, 1997

REPLY TO: KAO/AAMLO:RJS

SUBJECT: KAO Response To August 4, 1997 Secretarial Memo (Hanford PRF Explosion)

TO: Gene Runkle, Director, OSHD/AL

In response to your memo of August 14, 1997, in which you requested contractor and Area Office actions in response to the Secretary's memo of August 4, 1997, the Kirtland Area Office provides the following:

1. By attachment, Sandia National Laboratories' report on their assessment of chemical vulnerabilities in both active and inactive sites. The report includes a review of SNL technical competencies as they relate to the control of hazardous materials and SNL's assessment of the "Lessons Learned" program at SNL.

Rolled into the SNL report is the status of other actions concerning "Timely Notification of Emergencies and Significant Events", and "Response to Lessons Learned from the Emergency Response to the May 14, 1997 Explosion at Hanford's Plutonium Reclamation Facility" required by the Secretary's August 14, 1997 memo, and "Assessment of Hazards Associated with Chemical and Radioactive Waste Storage Tanks and Ancillary Equipment" required by the Secretary's October 21, 1997 memo.

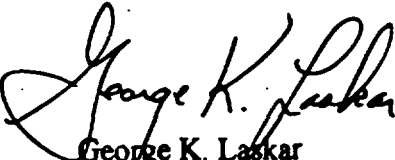
2. By attachment, Kirtland Area Office ES&H Procedure 4228 "Hazardous Material Control", which details the process by which the KAO will review and concur with the SNL actions concerning the handling, storage and disposal of hazardous materials. The Procedure also calls for continuing review of the SNL processes for control of hazardous materials, maintenance of technical competencies, and effectiveness of "lessons learned" activities.

3. By attachment, "Kirtland Area Office Technical Competency Review - December, 1997", which summarizes the ability of the KAO to provide review, approval, and oversight of SNL hazardous materials activities.

4. By attachment, Kirtland Area Office ES&H Procedure 4227 "Dissemination of 'Lessons Learned' and Other ES&H Information". This procedure details the process of receiving, disseminating, and tracking ES&H information transmitted to SNL.

The Kirtland Area Office will, through Facility Representatives and Subject Matter Experts, review the SNL submittals and provide validation of the SNL hazardous materials vulnerabilities, the technical competencies, and the "lessons learned" programs prior to April 1, 1998. A report of our review will be provided to you prior to April 15, 1998.

If you have questions, please contact Ron Simonton, Operations Advisor, at 845-4232.



George K. Laskar
Assistant Area Manager
Laboratory Operations

4 Attachments

cc w/o attachments
R. Glass, OTMO/AL
L. Jones, SNL, MS

EXECUTIVE SUMMARY

The purpose of this report is to present Sandia National Laboratories (SNL's) response to Secretary Federico Pena's Directives issued in a memo dated August 4, 1997 "DOE response to the May 14, 1997 explosion at Hanford's Plutonium Reclamation Facility". The format and details of this response were negotiated with DOE/KAO in a meeting on October 9, 1997 and were documented in SNL's Status report to the DOE dated October 15, 1997, "SNL's progress on meeting Secretary Pena's directives as requested in his memo dated August 4, 1997."

This report is divided into four sections and provides to the DOE the following information:

Section I: In Section I we have reported on our facilities that are Shutdown, in Standby, or are being deactivated. In response to this initiative we have reevaluated our facilities for buildings that have been shutdown, are in standby, or are being deactivated. The processes for managing these buildings is maintained by our Facilities Management Center in our Decontamination, Decommissioning, Demolition and Reuse (D3R) Program. This program manages buildings and space that are declared surplus to the current needs of SNL through their final disposition. A review of the data from the D3R databases by the Division ES&H coordinators and Building Managers indicated that with one exception (a Mobile office/trailer that does not contain hazardous materials) the data was accurate (see Table 1).

In these facilities we were tasked with the following:

1. Assess and report on the status of our known vulnerabilities (chemical and radiological).

As requested we have assessed and reported on our known vulnerabilities at these sites. All but one vulnerability identified during the Vulnerability Assessments (Chemical and Radiological) have been mitigated. The corrective actions to mitigate the remaining vulnerability (CSVR #3), identified during the Chemical Safety Vulnerability Assessment performed in March of 1994 is being worked with DOE/KAO and SNL Management.

2. Evaluate the facilities for chemicals or chemical residuals that have the potential for significant explosions, fires, or toxic release; validate the current characterizations of the materials at these sites; or implement plans to characterize them.

Hazardous Materials: Hazardous materials at SNL are controlled by many interrelated elements of SNL's ES&H Program. Currently we have several initiatives ongoing that are used to identify, characterize, and control chemicals hazards at SNL/NM.

- **Primary Hazard Screen (PHS):** PHS is an electronic on-line software tool to identify hazards of a facility, activity, or operation and to identify the required safety documentation necessary to perform the operation. During FY97, all SNL organizations were required to perform a PHS for their hazardous activities or operations. All PHS were completed as of October 15, 1997.
- **Chemical Information System (CIS):** The current transition into the CIS Inventory has provided us with another opportunity to reevaluate our hazardous chemicals and characterize our current chemical inventory. The current CIS Inventory links the bar-coded chemicals containers to a location and owner, the appropriate hazard and regulatory information, and the materials safety data sheets and is part of the Cradle-to-Grave tracking process. During FY97 SNL/NM initiated a wall-to-wall inventory of the SNL/NM site. To date 70% of the chemical containers on site have been inventoried and characterized. The wall-to-wall inventory will be completed in FY98.

Hazardous Waste: Once a request for disposition of a hazardous chemical is made, tracking of the material is moved from the CIS system to the Hazardous Waste Inventory. Hazardous chemical wastes inventories are maintained by the ES&H Center for wastes that have been picked up from the waste "generators". Characterization of hazardous waste is the responsibility of the generator and this information must be provided to the Waste Management Department through the electronic Disposal Request Form before disposition. The waste inventory allows for tracking of the hazardous waste from the original disposal request (Disposal Request Form) to the storage location at the Hazardous Waste Management Facility to its final destination.

Chemical Residuals: SNL currently does not have a comprehensive program for systematically surveying all facilities for chemical residuals. However several processes are in place that provide this information and serve as a mechanism for predicting the presence of chemical residuals. These programs include the Building Modification Hazards Assessment (BMHA), ES&H Space Evaluation Prior to Transfer of Ownership, and the Sub-site Management Program.

As part of this initiative Building Managers in the Sub-site Management Program were tasked to walk their buildings looking for potential unregistered Underground Storage Tanks (USTs). As of 12/1/97 previously unidentified or unregistered USTs were located several areas. Additional tanks are suspected in other areas. Details on this initiative and the USTs identified as well as plans for registration or disposition will be provided to the DOE in Mid January.

No other legacy chemicals, chemical wastes, or chemical residuals have been identified during this initiative at this time.

3. Properly dispose of unneeded materials in accordance with safety requirements, environmental regulations and DOE approval.

Disposal of any legacy chemicals or chemical residuals found during these initiatives will follow all applicable Federal, state, local, and DOE requirements. Note that disposition of legacy waste at SNL/NM is scheduled for FY07.

Section II: For our active facilities, we have provided a description of the systems and management processes we have in place to continuously identify any potential chemical and radiological vulnerabilities that may be brought on site. In addition, we have provided the schedule for completion of the Integrated Safety Management System (ISMS) and the Chemical Information System (CIS). These are two efforts play an important role in the identification and characterization of hazardous chemicals. Furthermore, there are several self-assessments that are currently or have recently taken place that assure timely identification of problems with the systems designed to identify and characterize our hazards. The results of these self-assessments are provided in this document.

Section III: As negotiated with the DOE we have provided an assessment of the technical competence of our staff using data from the DOE/EH evaluation performed in July and August of 1997 as a benchmark. Overall this evaluation found that SNL Management and staff "exhibited sufficient technical competence, experience, skill mix and knowledge of hazards to effectively and safely manage the various research, weapons, and production-related programs." A review of our Corporate ES&H Training Compliance records for December 5, 1997 indicates that 95% of all SNL personnel are in compliance with corporate required ES&H training and 96% are in compliance with organizational required ES&H training.

Section IV: In this section we have provided as requested, a status report on four other initiatives directed by the Secretary. In general work on all initiatives is progressing as scheduled.

INTRODUCTION

On August 4, 1997, Secretary Federico Pena issued a directive to the DOE and its contractors, "DOE Response to the May 14, 1997 Explosion at Hanford's Plutonium Reclamation Facility". This directive requested that each site contractor implement broad initiatives listed in the memorandum and report on the progress of these initiatives by the end of the calendar year 1997. This report presents Sandia National Laboratories' (SNL) response to that request in accordance with our agreement with DOE/AL discussed in a memo dated October 15, 1997, "Status Report - 'SNL's progress on meeting Secretary Pena's directives as requested in his memo dated August 4, 1997."

As agreed to in the above referenced memo, this document is a report on the following:

SECTION I: In our facilities that have been shutdown, are in standby, are being deactivated, or have otherwise changed their conventional mode of operation in the last few years we have:

1. Assessed and reported on the status of our known vulnerabilities (chemical and radiological) at these sites.
2. Evaluated the facilities for chemicals or chemical residuals that have the potential for significant explosion, fire, or toxic release; validated the current characterization of materials at these sites; or implemented plans to characterize them.
3. Reported on our processes to properly dispose of unneeded materials (chemical and radiological) in accordance with safety requirements, environmental regulations and DOE approval.

SECTION II: In our active facilities we have:

1. Provided DOE a description of the systems and management processes we have in place to continuously identify any potential chemical vulnerabilities that may be brought on site.
2. Provided a plan for completion of systems that are currently being implemented or tested.
3. Reported on self-assessments designed to check our systems/processes to ensure that they are working effectively.

SECTION III: We have provided an assessment of the technical competence of our staff using data from the DOE/EH evaluation performed in July and August of 1997 as a benchmark. We have also performed and reported on a check of our training records to determine the level of compliance with required ES&H training for our technical staff.

SECTION IV: We have provided a status report on the following initiatives as requested by the Secretary in his memo:

1. August 4 - Assessment of "Lessons Learned" program
2. August 27 - Timely Notification of Emergencies and Significant Events
3. August 27 - Lessons Learned from the Emergency Response to the May 14, 1997 explosion at Hanford's Plutonium Reclamation Facility
4. October 21 - Assessment of Hazards Associated with Chemical and Radioactive Waste Storage Tanks and Ancillary Equipment

SECTION I

Inactive, Shutdown, and Standby (Mothballed) Facilities

Identify facilities that have been shutdown, are in standby, are being deactivated, or have otherwise changed their conventional mode of operation in the last few years.

SNL consists of multiple organizations that pursue many different areas of research and development (R&D). These areas of R&D as well as the general laboratories operational services, necessarily involve the creation of a variety of different hazards. However, despite the number and variety of these hazards, the basic infrastructure within the corporation provides common tools and processes for hazards identification and management. The following information describes the processes and programs for managing our facilities that are being shutdown, deactivated or placed in a standby mode of operation.

In addition, several databases control SNL information on facility status. The location of these databases and their information is also included in this section.

Sites Integrated Master Plan: This document summarizes the comprehensive planning process and forecasts facilities development and redevelopment based on the Laboratories' mission and the programmatic and population projections made in the FY98 budget. It is intended as a guide for future building and facilities planning and encompasses the New Mexico (SNL/NM) and California (SNL/CA) research and development campuses, as well as the test facilities in Hawaii (SNL/HI/KTF) and Nevada (SNL/NV/TTR). This report represents a 20-year projection (FY2017) and provides a brief overview of the results of our planning processes.

The planning process, in its simplest form, is an analysis and interpretation of mission and workload projections, strategic plans, customer and stakeholder requirements compared to Condition Assessment Survey (CAS) and technical site data validated through the Integrated Sites Planning Council process. The principal intent of the planning process is to create plans, processes and projects for the development and redevelopment of SNL's sites, facilities and infrastructure that meet our customers' mission capability needs in a cost-effective manner while ensuring that safety and health issues are also addressed.

This plan and the specific details related to it can be located on the following IRN web site: <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/imp/notice.htm>

Condition Assessment Survey: With budget population reductions, it is becoming more evident that the Labs need to effectively reduce space. During FY95/96, SNL/NM performed a Condition Assessment Survey (CAS) of the site. During this survey, 198 buildings were analyzed. The results of the survey indicate that during that time, the average age of the selected SNL/NM buildings was 28 years. Of the occupiable buildings over 1,000 gross square feet, not including mobile offices and trailers, and not scheduled for rearrangement or removal, 90% of the space is of adequate or better condition. The average condition of the selected buildings is halfway between good and adequate. A current list of the buildings with completed CAS inspections is available from the Infrastructure Assessment Department or at the following URL: <http://www-irm.sandia.gov/organization/div7000/ctr7800/DEPT7819/condmjl.html>. This list is updated quarterly.

Major Rearrangements Program: This program utilized the CAS data to provide detailed analysis of the current condition of all physical plant assets, as well as plans for renovation based on importance to the mission and programmatic needs of SNL and the DOE. As part of the Major Rearrangements program, the Current, Continuing-Use and Future Facilities plan determines which physical plant assets are vital to the mission and programmatic needs of SNL and the DOE. It ensures that sufficient investments are made to keep those assets in acceptable working order to support the needs and safety of the end users. These plans are available from the Facilities Sites Planning Department.

Decontamination, Decommissioning, Demolition and Reuse (D3R) Program: The D3R Program was established to properly manage buildings and space that are declared surplus to the current needs of SNL, through their final disposition. The ultimate disposition could be reuse (through renovation), demolition, or transfer to agencies outside of the DOE.

SNL is committed to the protection of human health and the environment. The SNL D3R Program ensures that facilities intended for demolition or renovation are managed in a manner consistent with that commitment. The process coordinates with Facilities Subsite Management for the continued surveillance and maintenance (S&M) of vacated facilities until their decontamination or demolition. The program ensures that vacated facilities awaiting demolition are characterized relative to radioactive and chemical contamination and are decontaminated, if necessary and feasible, in accordance with U.S. Department of Energy (DOE) policy, to ensure that the health and safety of the general public and the environment are protected.

In addition, the D3R Program establishes processes which ensure that waste generated during D3R activities such as sampling, decontamination, demolition, and renovation is handled and disposed of safely and in accordance with DOE, federal, state, local, and SNL requirements. DOE has prescribed the requirements for decontamination and decommissioning of DOE-owned or operated facilities in DOE Orders 5820.2A, Chapter 5, "Decommissioning of Radioactively Contaminated Facilities" (DOE, 1988c). The D3R Program has been developed in compliance with that order. The D3R Process is documented in the "D3R Project Planning and Implementation Process".

Detailed information on the D3R program, including the Program Management Plan, Project Planning & Implementation Process, Building Shutdown Process, Process Work Breakdown Structure, as well as D3R Quarterly reports, is located in the following URL: <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/d3rhome.htm>.

- The **D3R Program Management Plan** has been prepared to establish and document management responsibility, as well as training and reporting requirements. The requirements of this plan are intended to assure that each facility scheduled for demolition or renovation is assessed, decontaminated, and renovated, or removed in a controlled manner consistent with applicable DOE, federal, state, local, and SNL requirements. The D3R Program Management Plan is located in the following URL:
<http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/d3rpgplan.htm>.
- The **D3R Project Planning and Implementation Process** documents how disposition of buildings and structures at SNL is accomplished. The primary objectives of this process include: identifying the tasks required to remove a building from SNL; identifying who is responsible for performing each task; determining the sequence of tasks; determining required deliverables and their contents; and continually improving the process. This document provides the overall strategy of the D3R planning and implementation process as well as a detailed technical plan and is located in the following URL:
<http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/ppproc.htm>.
- The **D3R Work Breakdown Structure** defines the individual activities associated with D3R and identifies the primary and secondary responsibilities of management and personnel. The D3R work breakdown structure is located in the following URL: <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/d3rproc1.htm>.
- The **D3R Building Shutdown Process** outlines the activities required for shutdown, temporary shutdown, and transition of SNL buildings to an inactive status. Activities include site inspections, assessment of permits and operating requirements, assets inventory for removal or reapplication, and facility preparation for reduced presence. This process establishes minimum requirements to adequately protect and maintain SNL assets. A list of buildings that have been shutdown or deactivated are available in the **D3R Building Shutdown list** – <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/shutdown.htm> (updated as of 08/01/97).

This list is updated twice a year and includes the buildings that have been shut down as of FY96 as well as the D3R schedule for the buildings. See Table 1, Attachment 1. Information on the D3R Building Shutdown Process is located in the following URL: <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/pickle.htm>.

- **The Facility Downsizing and Temporary Shutdown Guide** outlines the activities required for downsizing, temporary shutdown and transition of SNL buildings to an inactive (reserve) or partially inactive (standby/campaign/mothball) status in order to reduce costs of operation and maintenance for infrequent use buildings. Mothballed buildings are not "shutdown never to be reoccupied" but they are buildings which may stand inactive for extended periods of time and have changed status since 1994. Activities for placing facilities in standby mode include site inspections, assessment of permits and operating requirements, assets inventory for removal or reapplication and facility preparation for reduced presence. This process establishes minimum maintenance requirements for important/critical systems to preserve a facility's safe operating envelope and establish minimal surveillance/preservation activities to protect and maintain SNL assets. Agreements generated for specific buildings following this guide are maintained by the Building Managers and copies are maintained by all parties involved in the agreement. The list of buildings maintained in this capacity is contained in the **Facility Operational Status Report**. This is a monthly report of buildings which move from active to inactive status periodically. See Table 2, Attachment 1. As of FY95 when this program was piloted and implemented there have been no new buildings going into the process.

In addition to the above, the following databases of information are also included and are accessible through the D3R Program Homepage:

- **Building Occupancy and Moves Hotlist** – This is an Excel database accessible from the D3R homepage. This list is updated monthly and communicates to Sub-site and Building Managers the space and real estate management occupancy plans. See Table 3, Attachment 1.
- **D3R Five Year Plan** – <http://www-irm.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/d3r5yr.htm>. This list is updated monthly and communicates to Subsite Building Managers and Managers the D3R plan for buildings and mobile trailers for FY98 through out years. This list was updated on 11/1/97. See Table 4, Attachment 1.

In order to validate the information contained in these databases regarding deactive, shutdown, or standby buildings, the Division ES&H Coordinators were tasked, in a memo dated November 17, 1997, to evaluate the data and to verify its accuracy (Attachment 2). The results of their evaluation are included in Table 1 below:

TABLE 1**Identification of facilities in Shutdown, Standby, or Deactive Mode**

DIVISION	Data Accuracy and additional facilities identified in Shutdown, Standby, or Deactive Mode and not in the current database.
1000	Data Accurate
2000	Data Accurate
3000	Data Accurate
4000	Data Accurate
5000	Data Accurate – “Division 5000 has no buildings that meet the criteria.”
6000	<p>Addition to the Data –</p> <ul style="list-style-type: none">• MO59/60 is an idle mobile office/trailer that does not contain hazardous materials.• Building 9939 and associated buildings (Area III) are also idle. Division 6000 is in the process of moving equipment and chemicals off the site in order to turn it over to Facilities Management and initiate the D3R process.
7000	Data Accurate
8000	Data Accurate – “SNL/CA is currently planning for site space consolidation but definite plans for specific buildings have not yet been completed. A briefing for the SNL/CA Director Team on proposed building shutdowns for SNL/CA is scheduled for December 1997.”
9000	Data Accurate – “Division 9000 has no buildings that meet the criteria”
10000 - 13000	Data Accurate – “These Divisions have no buildings that meet the criteria”
14000	Data Accurate – “Division 14000 has no buildings that meet the criteria”

- | |
|---|
| 1. Assess the status of our known vulnerabilities at these sites. |
|---|

Radioactive Material

Since October 1993, SNL/NM has conducted three vulnerability assessments related to radioactive material:

1. **The Assessment of Vulnerabilities on Inventory and Storage of Spent Nuclear Fuel and other Reactor Irradiated Nuclear Materials,**
2. **The Plutonium ES&H Vulnerability Assessment, and**
3. **The Highly Enriched Uranium (HEU) ES&H Vulnerability Assessment.**

Each of these assessments was conducted by SNL/NM professionals, familiar with our nuclear material inventories, having backgrounds in HEU technology, process safety, criticality, seismic and other natural phenomena, fire protection, operations and maintenance, ventilation, radiation protection, industrial hygiene, and safety analysis.

Each of these assessments included other radioactive material collocated with the principal material under review. Consequently, these three vulnerability assessments identified hazards associated with nearly all of SNL/NM's nuclear material.

Each assessment determined that SNL/NM safely manages its nuclear material inventories and that appropriate barriers are in place to protect its workers, the public, and the environment from radiological hazards. Although several low likelihood, low consequence vulnerabilities were identified, all of them have been satisfactorily closed out.

1. Spent Fuel Vulnerability:

The potential vulnerability identified in the Spent Fuel Vulnerability Initiative was "The current approved safety analyses do not adequately address the storage of spent fuel and Reactor Irradiated Nuclear Materials (RINM)." Following this assessment, the need to upgrade SNL's Nuclear Facility Safety analysis Reports (SARs) to meet DOE 5480.23 was identified. Over the last 3 years SNL has updated the SARs to provide safety analysis for spent fuel and RINM storage location. SNL/NM is now current with its Safety Authorization Bases for all of its nuclear facilities (Table 2).

2. Plutonium Vulnerability:

SNL - 1: Lack of Safety authorization basis. The Plutonium vulnerability assessment also identified the lack of safety authorization basis for the material storage facilities as a potential vulnerability. This vulnerability was closed August 16, 1995 with current SARs in place for SNL Nuclear Facilities (Attachment 3). A current list of SNL/NM SARs is given in Table 2.

TABLE 2**List of Nuclear Facilities at SNL, NM and Respective Authorization Bases**

Nuclear Facility	Authorization Basis	Document Number	Date
Hot Cell Facility	Hot Cell Facility (HCF) - Safety Analysis Report (SAR)	SAND94-2650	December 1995
Sandia Pulsed Reactor Facility	Sandia Pulsed Reactor Facility Safety Analysis Report	SAND95-2126	September 1994
Annular Core Research Reactor Facility	Safety Analysis Report for the Annular Core Research Reactor Facility (ACRRF)	SAND93-2209	March 1996
Gamma Irradiation Facility	Gamma Irradiation Facility (GIF) Basis for Interim Operation	Revision 2	March 27, 1996
Manzano Waste Storage Facilities	Safety Analysis Report for the Manzano Waste Storage Facilities	Draft	February 1997

SNL-2: Uncharacterized storage of a plutonium metal disk. This vulnerability was closed out after thoroughly characterizing, repackaging, and shipping the plutonium metal disk to the Los Alamos National Laboratory for long-term storage in April 1996 (Attachment 4)

Four other vulnerabilities we identified as Institutional Vulnerabilities were detected during the Plutonium Vulnerability Assessment. Although a response to these vulnerabilities was not part of the management response plan, certain activities have been implemented at SNL to mitigate them.

SNL Institutional Vulnerability-1: Storage of Pu in non DOE facility. This issue was resolved by the corrective actions identified in SNL - 1. SNL is current with its Safety Authorization Bases for all Nuclear Material Storage Facilities (Table 2).

SNL Institutional Vulnerability-2: Lack of DOE direction for interim storage and ultimate disposition. Through an aggressive disposition program, SNL has reduced its surplus inventory by over 85% (from 28.3 MT to 3.6 MT) during FY96 and FY97.

SNL Institutional Vulnerability-3: Loss of Institutional Knowledge. Several initiatives are underway at SNL to address this vulnerability. 1.) Sandia is the first of the three DOE weapons labs to institute a large-scale, formal process of video taping interviews with nuclear weapons designers to create an archive of nuclear weapons know-how; 2.) Sandia is currently in the process of having employees complete a Resource Profile to be incorporated into an inventory of employee skills and abilities. This database of skills will be used first to assess Sandia's current capabilities so that there is complete knowledge of the breadth of expertise at the labs. This database will also contain expertise from past projects, both internal and external to Sandia which will provide the capability to pool historical skills and knowledge necessary for addressing issues. The first phase of this initiative is currently being implemented, and employees with weapons critical expertise and experience were required to enter their profile by November 1997. All other SNL employees are required to have a current profile entered by the end of FY98. Access to this data is available for SNL Managers through Human Resources On-Line Personnel Information Systems (OPIS). This system has the most current data available on organizational statistics, such as workforce

demographics and general employee data. This is available to SNL Managers through their user name and password.

SNL Institutional Vulnerability-4: Lack of safety inspection program. The Materials Systems and Security Audits Department and the Radioactive Source Control Department Managers have entered into a Memorandum of Agreement that addressed and resolved this Vulnerability (Attachment 5).

3. Highly Enriched Uranium Vulnerability:

The vulnerability from the Highly Enriched Uranium ES&H Vulnerability Assessment is also categorized as institutional and is described as loss of experience and resulting dependence on subcontractor personnel for radiation safety. As an institutional vulnerability, Sandia's Radiological Protection Program has not been tasked to correct this vulnerability regarding its Radiological Control Technician (RCT) workforce. Nevertheless, SNL has taken corrective actions to mitigate this vulnerability.

First, SNL is increasing the proportion of SNL employees in the RCT workforce. As of November 11, 1997, 22% of Sandia's RCTs were laboratory employees and are expected to remain as long-term employees. The Radiological Protection Program Management has requested an additional five SNL RCTs. When hired, this will increase the proportional of long-term RCTs to 34%. These long-term RCTs will oversee the work of the contractor RCTs who are less-experienced at SNL. This will help contractor RCTs deal with the unique radiological control situations at Sandia.

In addition, SNL has instituted a lessons-learned program for SNL RCTs. This program was instituted to communicate lessons-learned in both SNL's and other DOE-contractor radiological control programs. The goal is to increase the RCT experience base to help prevent similar radiological occurrences.

Hazardous Chemicals

Chemical Hazards were evaluated during the Chemical Safety Vulnerability Review conducted by the Department of Energy during the period of March 16 through March 25, 1994. The review determined that "hazardous materials are being stored and handled in accordance with SNL/NM corporate procedures and applicable standards," but identified three potential vulnerabilities.

CSV#1: Inadequate integrated work control of maintenance and construction activities in multi-user facilities. This first vulnerability, inadequate integrated work in multi-user facilities, was determined to stem from there being no responsible individual who is cognizant of and controls all facility operations and maintenance activities. Although this vulnerability was closed out in May 1994 (Attachment 6), the current Sub-site Management program has since replaced the Zone management program. In this program the Building Manager replaces the Zone manager.

Through sub-site management, the Building Manager is assigned by the Sub-site Manager to act as the Landlord's agent, to integrate customer requirements with the Landlord's responsibilities as steward of DOE assets. The primary tool for this integration is the Internal Lease Agreement, which the Building Manager negotiates with the customers. The Building Manager ensures the terms of the Lease Agreement are executed, and reports performance to customers on a regular basis. In addition, the Building Manager maintains regular contact with representatives of the building occupants and is familiar with the current operations and future plans. The Building manager also coordinates corporate-directed space transactions and monitors building maintenance activity and modification projects. The Sub-site Management system has been in operation since October 1996.

CSV#2: Weaknesses in, and lack of, integration among SNL/NM programs for identifying, characterizing, and mitigating chemical hazards. The weakness and lack of integration of SNL/NM programs for identifying, characterizing, and mitigating chemicals hazards was the result of the immaturity of several SNL/NM processes and needed refinement of other processes. This issue has been addressed by

Sandia's DOE/AL-approved (12/96) Integrated Safety Management System (ISMS). ISMS integrates work definition; hazard identification, analysis, and control; and assessment and improvement processes to ensure that work is performed safely. Sandia has already fully implemented the primary hazard screen (PHS) process to identify and categorize workplace hazards. The PHS identifies required training, the need for additional hazard analysis and/or emergency planning, and the regulatory requirements applicable to the defined work. Sandia's ISMS will be fully implemented by October 1998.

CSVR #3: Inadequate configuration management in aging laboratory facilities. A lack of configuration management was identified as responsible for the gradual degradation of essential building systems in older facilities. While SNL understands and appreciates the benefits that a configuration management program would offer, we feel that similar results could be achieved by applying many of the configuration management techniques along with the best business practices currently being implemented in our Facilities Management Program.

Therefore we have requested a change to our management response plan to reflect the changes to our corporate systems that are currently in place or are being implemented to assure management of this vulnerability. The benefits to our current approach are a simpler more flexible program that requires less overhead to develop and implement, easier to understand by SNL personnel already familiar with existing processes and organizations, and more adaptable to our ever changing business needs. The revised actions are being proposed in a memo to DOE/KAO and consist of a combination of strengthening existing processes, reorganizing some facilities structures, and establishing new process/roles/responsibilities. See Attachment 7 for a DRAFT copy of the proposal.

When this vulnerability (CSVR #3) is closed out all our corrective actions for mitigating site-specific Chemical Vulnerabilities will be complete.

2. Evaluate the facilities for chemicals for chemical residuals that have the potential for significant explosion, fire, or toxic release and validate the current characterization of materials at these sites or implement plans to characterize them.

Hazardous materials at SNL are controlled by many interrelated elements of SNL's ES&H Program. These are described in documents that portray how each element is managed, identify the bases for their requirements, how the elements interact or are related, and task ES&H support and line organizations with responsibilities for implementing the requirements and for providing instructions to on-site personnel including Sandians, subcontractors, and visitors. Information for the line managers on their respective requirements for the elements of SNL's ES&H Program are available from the ES&H Manual located at the following URL: http://www-irm.sandia.gov/corpdata/esh-manuals/esh_home.html. In addition, detailed information of the processes is available in program documents maintained by the respective ES&H organizations. These program documents detail the specifics of how each element is implemented.

The following section describes the over-arching programs and management systems that ensure that chemical hazards at Sandia facilities including inactive and standby facilities are managed appropriately.

Hazardous Chemicals

Primary Hazard Screen: The Primary Hazard Screen (PHS) is the first step to hazard identification and documentation. The Primary Hazard Screen (PHS) is an electronic, online software process to determine the hazard level and identify hazards of a facility, activity, or operation. The PHS was developed to replace the Preliminary Hazard Assessment (PHA), a process that was identified as a vulnerability in the Chemical Safety Vulnerability Assessment performed in 1994 (CSVR #1).

The basic purpose of the PHS is to identify potential hazard sources and group processes, facilities, and proposed modifications according to the magnitude of their hazards so as to determine the need and extent for follow-on safety analysis documentation such as; a hazards analysis (HA), safety assessment (SA), safety assessment document (SAD), or safety analysis report (SAR). Hazard screening is applied to new and existing facilities and processes as well as to proposed modifications to existing facilities and processes.

Those potential hazard sources or processes which have been identified, through the PHS, as being standard industrial or insignificant are screened out from further evaluation. Hazards or processes which are considered significant or nonstandard industrial are identified as requiring further analysis and documentation in the form of either a HA, SA, SAD, or SAR.

Requirements for performing and updating a PHS are outlined in Chapter 13 of the Sandia ES&H Manual. In addition, information and training on using the ISMS software and developing and updating PHSs is located in the following URL: <http://www-irm.sandia.gov/organization/div7000/ctr7500/ISEEMS/manual.htm>. The recent implementation of the PHS provided us with an opportunity to reevaluate the hazards associated with our activities and/or operations. PHS was fully implemented at SNL on October 15, 1997. At that time all SNL/NM organizations had completed a PHS for all of their hazardous processes, activities or operations. The PHS is one the tools of the Integrated Safety Management System for identifying, characterizing and controlling hazards at SNL/NM.

Chemical Inventory: Because the chemical inventory process at SNL is currently in transition it has provided us with another unique opportunity to reevaluate our hazardous chemicals and characterize our current chemical inventory. Prior to FY96 SNL used an inventory system, ChemMaster, that relied on an annual survey to collect inventory information. Its main goal was to comply with the Emergency Planning and Community Right-to-know Act Section 311 & 312 regulatory reporting requirements. The new system, Chemical Information System (CIS), consists of a database and tracking system that identifies and characterizes all chemical hazards on site. The CIS system was brought on-line to replace ChemMaster in 1996.

CIS involves the bar-coding of chemical containers as they enter Sandia to allow tracking and real-time chemical inventory data. The CIS system links the bar-coded chemical containers to a location and owner, the appropriate hazard and regulatory information, and the material safety data sheets. The bar-coded chemical containers are tracked as they leave the facilities to provide usage information. The system is an integral part of the SNL Cradle-to-Grave Tracking process and will be linked with the Preliminary Hazard Screen tool and other ISMS tools as appropriate. The system provides inventory and hazard information to line and ES&H organizations; Material Safety Data Sheets to workers; potential exposure information to medical; Hazard information to emergency response personnel; as well as providing the necessary data for regulatory reports.

The migration to CIS from ChemMaster was approved by management in November 1996. At that time, a wall-to-wall inventory of the complete SNL/NM site was authorized to capture those chemicals purchased prior to the CIS system coming on-line. During the summer of 1996 a team conducted an inventory prototype in Building 878. With the lessons learned and input from management and the Line Implementation Working Group (LIWG), a FY97 chemical inventory plan was adopted. This plan used the ChemMaster Inventory information and the Hazard Assessment Documents (HAD) to assess the building's risk relative to hazardous chemicals. This risk information was used to prioritize the building scheduled during phase one of this project for the wall-to-wall inventory.

During Phase 1, thirty-three buildings or 70% of the chemical containers on site have been inventoried (See Table 3).

TABLE 3
Buildings with Chemical Inventory Completed

Facilities	# labs/bldg.	#chemicals
<i>Building 878 (AMPL, completed)</i>	71	6328
Building 9960	2	288
Building 897 (IMRL)	109	16748
Building 823	49	4822
Building 893	43	2929
Advanced Material Laboratory	25	3051
Building 858 (MDL)	36	1753
Building 983 (IV)	13	1851
Building 970 (IV)	12	1417
Technical Area V	20	980
Building 894	43	3825
Building 905	102	2733
Building 883 (Photovoltaic)	9	504
Building 962 (IV)	27	1821
Building 960 (IV)	17	1137
Building 884	17	801
Total	595	50988

During FY98, Phase 2 of the Inventory Process will include inventorying of all buildings on the shut-down, stand-by, or hot-list. There are forty-three buildings in this category (Table 1, Attachment 8). Priority will be given to those shutdown or deactive buildings that have maintained high risk chemicals in the past or with ten or more entries in their ChemMaster inventory. There is currently a total of thirteen buildings in this category (Table 1* -- Attachment 8).

Phase 3 will consist of an inventory of all buildings with 10 or more chemicals listed in their ChemMaster or CIS Inventory as of January 1, 1998. There are currently sixty-eight buildings in this category that are

being scheduled for inventory (Table 2, Attachment 8). Any building without entries in either ChemMaster or CIS are presumed to be office space during this phase of the project.

The priority of inventory for all buildings in phase two and three will also be based on the business needs, the available resources, and input from the line organizations. The CIS Program team will complete the inventory of all buildings on site (SNL/NM) by the end of FY98.

Hazardous Chemical Wastes

SNL's hazardous chemical waste inventory is maintained by the ES&H Center, for wastes that have been picked up from line organizations (generators) and transported to the Hazardous Waste Management Facility (HWMF). The HWMF is a RCRA-permitted facility for the packaging, segregation, and storage of hazardous wastes. All hazardous wastes generated at SNL/NM are transported from satellite generators' accumulation points to the HWMF where they are prepared for shipment off-site to a recycling, treatment, or disposal facility. Generators are responsible for knowing what is currently in storage in their respective laboratories and must provide an accurate characterization of all wastes before it will be accepted at the HWMF. Requests for hazardous waste disposal can be submitted on the Electronic Disposal Request Form available at the following URL: <http://rembrandt.sandia.gov:8001/oe/owa/sldws001>. This is sent to the HWMF for waste classification by an on-site chemist and then the waste is scheduled for pickup by field technicians.

HWMF personnel (pickup crew) assigns a unique bar-code number by the physical application of a bar-code sticker to each package of waste and segregates the waste according to Department of Transportation (DOT) Hazard Class for transporting to the HWMF. Since barcoding occurs at the packaging level, each item can be tracked throughout its history. The waste package now has a unique identity that allows the tracking of the hazardous waste package from the original disposal request with accompanying generator information, to the storage location at the HWMF and to its final destination. All disposal request fields can be used alone or in combination to retrieve general or very detailed information about the generator or the waste. The storage locations are also barcoded as an aid for inventory.

In addition, any hazardous materials generated during decontamination is managed by the Hazardous Waste Management Facility in accordance with all applicable environmental regulations. Scrap metal and equipment which has been decontaminated and is still usable is sent to the Property Reapplication Department. Information gathered about hazardous materials from scrap metal and equipment can support initial efforts to compile data on potential chemical residuals in the structures, systems, and equipment the scrap material was taken from.

The SNL/NM inventory of Hazardous Waste is located on a local database controlled by the Solid and Hazardous Waste Department. Currently SNL/NM is transitioning from this database to Oracle Environmental a comprehensive Waste Management Tracking System. Full implementation of Oracle Environmental is expected by the end of FY98.

Chemical Residuals

SNL does not currently have a comprehensive program for systematically surveying all structures, components, and systems for the presence of chemical residuals. SNL does, however, have programs which indirectly provide information that serves as a mechanism for predicting the potential presence of chemical residuals in some areas. The programs which provide this type of information include the following:

- Building Modification Hazards Assessment (BMHA)

When planning modifications of building structures (remodeling, repairing, etc.), systems (ventilation or plumbing, etc.), or equipment (fume hood installation or removal, relocation of drains, removing or

adding benches or other equipment, etc.) at SNL, the Facilities organization designer/planner for the project reviews project requirements and hazard information provided by the space/equipment owner to determine if there is a need for a building modification hazards assessment (BMHA). Prior to any modification with potential hazards associated with the area/equipment being modified, a written BMHA request is submitted to the Division ES&H Team. The written request includes the site location, the space/equipment owner, the name of a Facilities organization contact, any process and hazard information provided by the space/equipment owner, and, if available, pertinent design specifications or blueprints for the modification project. Subsequently, hazards are assessed and recommendations are made for ES&H requirements that must be implemented during the modification project to ensure worker health and safety, as well as environmental protection.

Performing these assessments includes compiling information on past and present processes and chemical use associated with the space or equipment being modified. This information can indirectly serve as a starting point for predicting potential chemical residuals for those areas which have undergone a BMHA evaluation. It can also serve to alert ES&H organizations about new processes and chemicals that are coming on-line so that measures can be taken to minimize potential residual deposition.

- **ES&H Space Evaluations Prior To Transfer Of Ownership**

ES&H space evaluations are performed by the Division ES&H Team prior to approving the transfer of ownership for spaces at SNL. The space transfer process is a part of the Facilities Space Management Program. When a request for transfer of ownership is received by Facilities, the request is routed through an ES&H space transfer coordinator. This individual provides copies of the request to the Division ES&H Team. Subsequently, each organization inspects the space for potential hazards. In each case, if problems are detected, the space owner is responsible for correcting the problems before transfer of ownership is approved. Information that is gathered on past and current processes and chemical use can support initial efforts to compile data on potential chemical residues for those areas which undergo an ES&H evaluation.

The process and chemical use information that has been compiled as a result of the programs outlined above is another point for predicting possible chemical residuals in buildings, equipment, and systems at SNL. Since the specific goal of these programs is to ensure personnel health and safety rather than to identify and quantify chemical residuals, the quality of the data, as it relates to a chemical residual inventory, is limited. Furthermore, the information that has been compiled is limited to those areas that have undergone a BMHA evaluation or a space transfer. Although the data can not be considered comprehensive, it serves to identify processes and associated chemical use that may be indicative of the potential presence of chemical residuals for the buildings, equipment, and systems that have been evaluated.

- **Sub-site Management Program**

SNL/NM has initiated the Sub Site Management Program to replace the Zone Management Program. In the Sub-site Management Program, the Building Manager is assigned by the Sub-site Manager to act as the Landlord's agent regarding stewardship of DOE assets. The Building Manager is responsible for maintaining routine contact with a representative of the building occupants who provides information concerning the customer organizations' current operations and future plans. The building Manager also brokers space transactions between organizations in the sub-site, coordinates corporate-directed space transactions, and manages corporate space. He also monitors building maintenance activity, modification projects, and other services to facilitate space ownership and responsibility. The Building Manager is also responsible for maintaining the data on chemical residuals and waste for the building.

During a routine operation in 6/9/97 an SNL/NM manager and building manager identified an unregistered leaking Underground Storage Tank (UST) located at Building 9939. Corrective action for the UST at Building 9939 included registration, site assessment and closure. In response to this

finding DOE/KAO requested a thorough scrutiny of all SNL/NM facilities for the potential existence of unregistered USTs. Therefore, all Building Managers at SNL were tasked with walking their responsible sites (all sites both active and inactive) and identifying any chemical residuals in underground tanks or storage areas that are not identified in our current inventory programs or appropriately registered

We are currently performing an extensive search of all SNL/NM facilities for any previously unidentified or unregistered USTs. Facilities Project Development Department (7924) is coordinating the UST search effort. Environmental and Emergency Management Department (7575) is collecting the information and in conjunction with the compliance and Metrics Department (7511), is providing a regulatory review of each tank.

As of 12/1/97, we have located the following tanks during the current search effort:

- Building 6523 3,000 gallon hydraulic fluid system
- Building 6505 UST with approximately 300 gallons of liquid sampled 11/3/97
- Building 840 Arco 521 Quench oil tank
- Building 840 water quenching bath
- Building 6536 water
- Building 831 emergency decon UST

We suspect tanks at the following locations:

- Building 6610 fuel oil
- Building 6560 fuel oil
- Building 891 2(?) 12,000 gallon water, glycol and inhibitor USTs reported
- Tech Area IV 2 waste oil tanks and several water tanks
- Tech Area V report due 12/5/97

All newly identified USTs will be evaluated for their use and any unknown material stored in a UST will be analyzed and dealt with appropriately. Waste material will be handled in accordance with SNL policy following DOE approval. All UST systems that require registration will be properly registered with the UST Bureau and either brought into compliance or closed as mandated by the regulations.

The end result of the UST search will be a comprehensive list of all known underground tanks, including: point of contact, tank contents, and regulatory status at SNL/NM. A final report will be delivered to DOE/KAO in mid January. A list of known USTs that are active, closed, removed, or deregistered is included in Attachment 9. This database is maintained by the Environmental and Emergency Management Department.

4. Disposal of unneeded materials (chemical and radiological) in accordance with safety requirements, environmental regulations and DOE approval.

The disposal of any unneeded or unwanted chemicals or chemical residuals at SNL follows all applicable Federal, state, local, and DOE requirements. Information for line managers on the proper disposal of hazardous waste (chemical, radiological and mixed) at SNL/NM is located in Chapter 19 of the ES&H Manual at the following URL: <http://www-irm.sandia.gov/corpdata/esh-manuals/mn471001/c19toc.htm>. Detailed plans and procedures about how hazardous wastes are handled are incorporated into program documents that are maintained by the Waste Management Department

Any legacy materials identified during the current Building Manager walk-throughs or PHS and wall-to-wall inventory process will be disposed of according to current federal, state, and local requirements with oversight and approval by DOE/KAO representatives. However, current Waste Management Plans and Budget allows for disposition in FY07. Should disposition of these materials require an accelerated schedule, additional funding will be necessary.

Section II

Active Facilities

1. Provide to the DOE a description of the systems and management processes we have in place to continuously identify any potential chemical vulnerabilities that may be brought on site.

Hazardous materials management at SNL/NM is divided into the management of the following types of materials which are considered hazardous: *radioactive, chemicals, and explosives.*

Radioactive Materials

Radioactive materials are defined as any substances which emit, by spontaneous nuclear disintegration, particle or electromagnetic emanations. The US Code of Federal Regulations (49 CFR 173.403) further defines "radioactive material" as any material having a specific activity greater than 0.002 microcuries per gram.

Nuclear materials are a subclass of radioactive materials defined by the Atomic Energy Act of 1954. Nuclear materials are used principally by the US government for national security and defense purposes, but are also be utilized by our civilian nuclear power industry to generate electricity and by numerous universities in our country for research purposes. Nuclear materials are further divided into *special nuclear materials, source materials, and other nuclear materials.*

SNL/NM currently has nineteen active projects which use nuclear materials. Sixteen of these projects are sponsored by DOE, two by the Department of Defense (DoD), and one by the Nuclear Regulatory Commission (NRC). DOE projects at SNL can be further divided into four main areas: nuclear reactor-related programs, weapons testing and weapons systems training programs, production operations, and other programs.

DoD sponsored programs using nuclear material include Nuclear Treaty Verification studies and the Space Thermal Nuclear Propulsion program.

Nuclear Regulatory Commission-sponsored studies are mainly related to the safety of U. S. commercial nuclear power plants. These studies have involved the testing of fuel mockups or small fuel assemblies under simulated accident conditions to test the effectiveness of existing nuclear safety systems as well as aiding in the design of improved safety systems.

Management of Radioactive Materials

Over the years, SNL/NM has adopted a two-pronged planning approach to managing nuclear materials and maintaining inventories at mission essential levels. Our first goal was to develop a plan to reduce large quantities of surplus nuclear materials that no longer supported ongoing or projected programs. Secondly, the Nuclear Materials Management Operations required project planning of future Direct-Funded projects include total life cycle costs analysis to ensure funding for the decommission and disposition (D&D) phases of projects that utilize nuclear materials.

For our nuclear materials management operations, we employ "total life cycle cost" analysis, a structured process for identifying, evaluating, and analyzing all costs associated with programs and projects from "cradle to grave." This type of analysis is a more comprehensive approach that goes beyond the regular planning and budgeting activities to incorporate the evaluation of other costs and activities including storage, security, radiation protection, and other life cycle management costs. This type of cost analysis is particularly important in situations when these cost elements are significant in comparison to original

base cost estimates.

Total life cycle cost planning enables project managers to more fully understand the total costs and liabilities associated with acquiring hazardous materials, including nuclear materials. Considering total life cycle costs can also be used as a cost/benefit tool to help ensure that the benefits of acquiring and using nuclear materials outweighs the costs of onsite management of materials that are no longer of use to the Laboratories; or, at a minimum, as a tool to understand the liabilities before acquiring more nuclear materials.

Disposal of Radioactive Materials

SNL/NM is continually eliminating unneeded nuclear materials from its inventory. SNL/NM has already disposed of over 24.5 metric tons of surplus materials (over 85% of its surplus nuclear materials) since January 1996. Reducing these surplus materials has resulted in a number of significant beneficial impacts on Laboratory operations. These benefits include: elimination of Safeguard and Security targets, elimination of nuclear material items that are difficult to measure, reduction of highly irradiated spent nuclear fuel, consolidation of waste materials, construction of a Hot Cell facility for materials characterization and packaging, establishment of an approved low-level waste program at the Nevada Test Site, elimination of two Nuclear Facilities, reduction in sources of radioactive hazards and personnel exposures, and a significant reduction in the amount of space required for nuclear materials storage.

SNL/NM conducts its radiological operations in full compliance with all applicable laws, regulations, and DOE orders so that the health and safety of all its employees, contractors, and the general public are ensured. In achieving this objective, SNL/NM ensures that radiation exposures to its workers and the public and releases of radioactivity to the environment are maintained below regulatory limits. Deliberate efforts are made to further reduce exposures and releases in accordance with a process that seeks to make any such exposures or releases as low as reasonably achievable (ALARA). SNL/NM is fully committed to implementing a radiological control program of the highest quality that consistently reflects the ALARA policy.

Chemical Hazards

Chemicals are the second class of hazardous materials managed by SNL/NM and are defined as any element, chemical compound, or mixture of elements and/or compounds. Chemicals are used at SNL/NM to support most activities including the physical and chemical sciences, micro-electronics and photonics, manufacturing technology, materials and process sciences, and neutron generator production.

Management of Chemical Hazards

Chemical hazards at SNL/NM are managed as part of an overall corporate Integrated Safety Management System (ISMS) that applies to all work activities at SNL/NM's facilities.

The primary management strategy for the control and management of hazardous chemicals at SNL is to prevent overexposures to hazardous substances to workers, the public and the environment. Managers who direct day-to-day work within each line organization are primarily responsible for planning work activities using the ISMS and ensuring that the necessary ES&H provisions and support are incorporated into the work plans, considered in the budget decision process, and implemented during the operation or activity.

The Industrial Hygiene (IH) program at SNL provides the leadership, resources, and services to ensure and protect the safety and health of employees, contractors, and the public. The IH program provides line managers direct support with the identification, evaluation, and control of chemical, physical, biological, and ergonomic hazards and stresses associated with laboratory operations, production, office, and other activities found in the workplace.

In the ISMS process chemical hazards are classified as either Standard Industrial Hazard (SIH), low or moderate using the PHS. The moderate classification is achieved in facilities where inventories of specific chemicals exceed Threshold Quantities (TQs) as defined in OSHA 29CFR1910.119 or EPA 60CFR Part 68 regulations. According to these regulations, TQs require an evaluation functionally equivalent to a Safety Assessment as defined by DOE Order 5481.1B. Therefore, a moderate classification for chemicals exceeding the TQs is consistent with the perspectives of National regulatory agencies.

The screening criteria to distinguish between low hazard and Standard Industrial Hazards (SIH) is based on the potential to impact individuals other than workers in the immediate vicinity of the operation. The latter population is considered adequately protected by national consensus standards and OSHA. Criteria are based on Uniform Building Code (UBC) definitions of hazardous chemical operations, on characteristics of highly vulnerable chemical processes described in the Dow Chemical Guidelines and on dispersion modeling for releases of toxic chemicals. Accordingly the following chemical hazards are classified as low, and require a hazard assessment:

- Known or suspected human carcinogens
- Caustic liquids in volumes exceeding 2 gallons
- Flammable liquids in volumes exceeding 10 gallons.
- Pyrophoric gases
- Class 3 or 4 reactives
- Organic peroxides
- Toxic Chemicals in quantities capable of generating aerosol concentrations exceeding the ERPG-3, or equivalent, at 30 meters.
- Highly vulnerable chemical processes as defined in the Dow Chemical Guidelines.

The potential for emergencies involving hazardous materials is identified through a facility-specific hazard assessment process. As part of this process, all inventories of hazardous material are formally reviewed against predetermined screening values. If material is used or stored in quantities exceeding the screening values, dispersion modeling is done. If inventories could hypothetically create an emergency if released, emergency planning zones are defined. The hazard assessment process is documented in facility-specific Hazard Assessment Documents (HADS). The purpose of HADs is to provide an information basis for emergency planning, preparedness and response programs for SNL. The hazard assessment process at SNL is fully compliant with DOE Order 151.1, and its predecessor, DOE Order 5500.3.

In addition, we maintain the Emergency Management System at SNL in accordance with appropriate DOE orders and establishes planning, preparedness, and recovery capabilities to minimize the consequences of emergencies to people, property, environment, national economy, and security. Through this program the ES&H Emergency Response Team (ERT) is responsible for the mitigation of incidents that affect the environment and the safety and health of human life.

Disposal of Hazardous Chemicals

The disposal of hazardous chemicals at SNL/NM follows all applicable state, federal and local regulations. Information for the line user on the storage and disposal of hazardous waste can be found in Chapter 19 of the ES&H Manual (URL: <http://www-irm.sandia.gov/corpdata/esh-manuals/mn471001/c19toc.htm>). Detailed information on the process of managing chemical waste is available in program documents maintained by the Waste Management Department.

According to our processes SNL/NM waste generators shall regard as hazardous waste all waste chemicals, including contained gases, liquids, and solids, unless a waste profile has been performed to determine that they are not. (Examples of hazardous waste include, but are not limited to the following: solvents, acids, bases, oxidizers, flammable or combustible substances, commercial cleaning products, paints, explosives, propellants, pyrotechnics, and any liquid not specifically allowed in landfills, storm sewers, or sanitary sewers.)

The following waste metals and waste bearing these metals are also regarded as hazardous waste: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. (Examples of metal-containing hazardous waste include, but are not limited to, the following: nickel/cadmium batteries, cadmium-plated nuts and bolts, lead solder, incandescent light bulbs, lead/acid batteries, mercury thermostats, mercury vapor lamps, film negatives, photographic paper, or spent film processing fluids containing silver.) In addition, any waste items that are contaminated with or contain any of the above chemicals or metals, unless a waste profile has been done are regarded as hazardous waste. (Examples include: wipes, swabs, debris, hardware, equipment, and certain empty containers.)

SNL/ NM consists of hundreds of individual research laboratories that generate over 14,000 different waste streams, approximately 90 percent of which are small containers that are overpacked in lab packs. Spent solvents and waste oils make up the larger containers of waste. SNL/NM, generates over 1,000 kilograms of hazardous waste per month, giving it large-quantity generator status with stricter regulatory requirements.

Individual generators are responsible for managing hazardous wastes prior to transport to the HWMF. Generators characterize their waste, either through knowledge of process, fingerprint checks, HazCat procedures, or laboratory analyses. This information can be submitted on the Electronic Disposal Request Form (<http://rembrandt.sandia.gov:8001/oe/owa/sldws001>) which is sent to the HWMF for waste classification by an on-site chemist and then scheduled for pickup by Field Technicians. Generators are responsible for knowing what is currently in storage in their respective laboratories and must provide an accurate characterization of all wastes before it will be accepted at the HWMF.

Explosives

Explosives are the final category of hazardous materials managed by the Laboratories. Explosives include any chemical compound or mechanical mixture which, when subjected to heat, impact, friction, shock, or other suitable initiation stimulus, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases that exert pressures in the surrounding medium. The term, explosives, thus applies to materials that either detonate or deflagrate.

Management of Explosive Materials

An Explosive Inventory and Information System (EIS) is used by SNL/NM to track all explosives and explosive-containing devices and assemblies from acquisition through use, storage, reapplication, and transfer, or disposal.

The EIS provides information on material composition, characteristics, and shipping requirements; life cycle cost information; plan of use; and duration of ownership. The EIS database includes a corporate-wide inventory system of all energetic material owned or controlled by SNL/NM line organizations.

EIS users are SNL employees or contractors who are directly or indirectly involved with explosives-related work at the following sites: SNL/NM; SNL/CA; SNL/TTR, SNL/NTS, SNL/Kauai, and SNL/Pantex (WETL). In addition, DOE/TSD and Allied Signal maintain their inventory on the EIS database.

Explosive material arrives only at an authorized location. Upon arrival, the explosive-carrying vehicle is inspected, the documentation is reviewed, and the material is placed in an appropriate staging location by trained personnel depending on the type of explosive and its compatibility code.

The explosive material is processed through the receiving database and through the explosive control database. Pertinent data are placed on labels and affixed to the explosives. The explosives are then distributed by a specially trained handler along designated routes using an inspected vehicle. Explosives

are delivered only to an authorized recipient at an authorized explosive location. At no time during transport is the material left unattended.

When explosive material is moved from one on-site location to another, the recipient contacts the SNL/NM transportation organization to request the transfer and completes a transfer or storage withdrawal document. Both the transportation organization and the safety engineer determine whether the location and recipient of the material are authorized to accept that material. The material is then distributed by a specially trained handler along designated routes in an inspected vehicle. The explosive is delivered only to an authorized recipient at an authorized location. At no time during transport is the material left unattended. Depending on the type of material and its net explosive weight, the fire department may be informed of the transportation and the vehicle carrying the explosive cargo may be "placarded."

When explosive material is moved from one onsite location to storage on-site, the recipient contacts the transportation organization to request the storage and completes the storage input document. The transportation organization determines a storage location authorized to accept the material based on its type, compatibility code, and the storage availability. The material is then distributed by a specially trained handler in an inspected vehicle to an appropriate storage location at an authorized explosive location. The transfer is made only along designated routes. At no time during transport is the material left unattended. Depending on the type of material and its net explosive weight, the fire department may be informed of the transportation and the explosive-carrying vehicle may be placarded.

Disposal of Explosive Materials

EIS inventory controls include tracking material from acquisition through use, reapplication, sanitization, demilitarization, or disposal. The EIS uses a bar coding and labeling system compatible with MILSTD 1189. The EIS employs a scanner program to guide the user through process of shipping, receiving, and tracking inventories. The EIS tracks items as single units through both the assembly and disassembly process and provides an end disposition process for transfer, use, reapplication, sanitization, or demilitarization. Further, the EIS provides a complete and characterized chemical waste process for material declared waste including associated materiel, such as rags, wipes, and firing residue.

SNL/NM explosive policy adopts a "cradle to grave" philosophy for the controlled acquisition, use, storage, and disposal of explosives and items containing explosives. Acquisition justification requires the owner to provide for the life cycle of the material to insure compliant use, storage, and disposition. The justification for continued storage and use requires periodic storage review, giving consideration to the specific programmatic needs, and the storage life of the material. Disposition of material in excess of programmatic needs will be processed for reapplication, sanitization, demilitarization, or declared waste. Materials identified for disposal must be processed expeditiously and in compliance with applicable safety, security, and environmental regulations.

2. Provide to the DOE a plan for completion of this systems described above that are currently being implemented or tested.

- **Integrated Safety Management System**

The ISMS is currently being implemented according to the schedule contained in Attachment 10. This includes a Gantt chart that shows the work breakdown structure and schedule for developing and implementing the integrated safety management system. Tasks 1 through 18 represent the system design phase, tasks 19 through 43 show completion of system development, and tasks 44 through 61 describe the implementation phase. Activities during the past year leading up to the present are also shown to illustrate that our integrated safety management system is built upon existing elements. The notes that follow the Gantt chart help explain the subtasks that make up the major tasks. Many line organization currently have in one form or another most or all of the parts of the Integrated Safety Management system. In addition,

implementation of the primary hazard screening tool used in the ISMS was completed on October 15, 1997 by all line organizations.

- **Chemical Information System**

The CIS Risk-Based inventory is currently being implemented. Prioritization of buildings schedule for the risk-based inventory is based on business needs, the available resources, and input from the line organizations including information on the risk of the chemical hazards. The CIS Program team is planning to complete the inventory of all SNL/NM buildings by the end of FY98 according to the following schedule:

- | | |
|----------------|--|
| Phase 2 – FY98 | Inventory all buildings that have been shutdown or deactivated. Priority will be given to those buildings with high risk chemicals or with 10 or more entries in their ChemMaster Inventory. |
| Phase 3 – FY98 | Inventory of all buildings with 10 or more entries in their ChemMaster Inventory. |
| Phase 4 – FY98 | Inventory of all remaining buildings with chemicals listed in ChemMaster or CIS. |

3. Report on self-assessments designed to check systems/processes to ensure that they are working effectively.
--

SNL/NM routinely performs self-assessments functional assessments and independent assessments of its systems and process to ensure that they are working effectively. Line self-assessment are conducted by the line organizations in accordance with the ISMS framework. Functional self-assessments are conducted by the ES&H organizations and are used to ensure that the ES&H programs are adequate and functioning appropriately. Independent assessments are conducted by the ES&H Program Assessments office. Results of these assessments are maintained by the Compliance and Metrics Department and are reported in the quarterly report to the Laboratory Operations Council. This report describes the status of ES&H in the labs and identifies major issues, trends, accomplishments and lessons learned.

Self assessment of Radioactive Management Processes

To ensure that all nuclear materials are safely managed, SNL/NM conducts self-assessments of its inventories and radioactive management processes. These self -assessments have resulted in a program to reduce surplus inventory. Through an aggressive disposition program, SNL has reduced its surplus inventory by over 85% (from 28.3 MT to 3.6 MT) during FY96 and FY97.

In addition, the Radiation Protection Program performs self assessments to satisfy § 10 835.102, "Internal audits." This requirement states "Internal audits of all functional elements of the radiation protection program shall be conducted no less frequently than every 3 years and shall include program content and implementation." SNL/NM charted such an audit in the Summer of 1996. Through this process the Radiation Protection Program has conducted audits of RP records management, monitoring in the workplace and is presently collecting data in an assessment of posting and access control. It is expected that the requirements of § 10 835.102 will be met for the first three year cycle by December 1998. Information on the self assessments performed by the Radiation Protection Program can be obtained from the Radiation protection Line Support Organization (7525).

Furthermore, as described previously, SNL has participated in several extensive vulnerability assessments conducted by the DOE. The purpose of these vulnerability assessments was to identify conditions or weaknesses that could result in the exposure of workers or the public to ionizing radiation, or in releases

of radioactive materials to the environment. The results of these assessments were reported earlier in the document.

Self-assessments of Chemical Management Processes

HAD: Hazard Assessment Documents have been written for all previously identified SNL/NM facilities that contain inventories of chemicals with the potential to have an impact outside of the facility or off-site. Among these, SNL has ten facilities containing chemicals that, if released, could cause severe health effects outside of the technical (secured) areas, assuming no mitigation. For the purposes of this review, severe health effects are considered to be airborne concentrations at or above ERPG-2 levels or equivalents. Brief Facility Description for each of these is provided in Attachment 11.

In September 1997 SNL also conducted a review of all buildings with hazardous chemicals including those that did not have a Hazard Assessment Document (HAD). The purpose of this review was to determine whether those facilities at SNL/NM could generate a toxic chemical release at or above ERPG-2 levels at the site boundary. This review included parking lot release scenarios using the current chemical inventory for buildings. Building 6635 and ED SHED were identified in the screening process as having hazards that surpassed the criteria but do not have a current hazards assessment document. The following buildings were identified in the screening as having hazards that surpassed the criteria and do have current hazards assessment documents or have HADs in process: 805/6/7, 878, 880, 883, 884, 888, 893, 894, 897, 905, 970, and 983. During FY98 all HADs for SNL/NM will be revised and updated. The buildings identified in these two reviews will be used during FY98 to prioritize facilities for upgrading or writing a new HAD.

ISMS: The Department Manager of the Environmental and Emergency Management (7575), initiated a self assessment of ISMS implementation to be performed within Dept. 7575. The Center Director, 7500, requested that the ES&H Coordinator for Center lead the self assessment. The ES&H Coordinator and the Dept. Manager then developed a written and approved self assessment plan. The self assessment team include a person from the Integrated Management Systems and Assessment Dept. (4541) and a project leader from within the group being assessed. DOE personnel were invited to observe/critique the self assessment. DOE persons observing included a Facility Representative (FR), a member of the ISMS team from DOE/KAO, and a DOE/AL staff person.

The self assessment team focused on the application of ISMS in the Clean Air Network (CAN). The purpose of the self -assessment was:

- Validate progress of ISMS in Dept. 7575
- Identify improvements to implementation
- Identify lessons learned related to the ISMS self assessment tool

From 12:30 PM - 4:30 PM on Dec. 3, 1997, interviews were performed of the Department Manager and the Project Leader for the Clean Air Network (CAN). A corporate Self Assessment tool (for initial implementation of ISMS) was used as the assessment criteria. The team then visited two field sites, interviewing several technicians, and then had a follow on discussion with the Department Manager and the Project Leader.

At this time, the self assessment team is compiling their observations and recommendations. Follow up Actions (from the date of the self assessment - 12/3/97) are as follows:

Report from the Self Assessment Team	Within 10 working days of the self assessment, the assessment team will provide the Manager of 7575 a written report of observations and if appropriate, recommendations. The Center Director (7500) and DOE participants will be
--------------------------------------	---

	provided a copy of the report.
Follow Up	The Manager, Dept. 7575 is responsible for responding to the self assessment report within 15 working days of the date of the self assessment report. The response will identify improvements, as determined necessary by the 7575 Manager.
Lessons Learned	Barry Schwartz (team leader for the self assessment) and Allison Davis (assessment team member) will make a presentation to the ISMS Line Integration Team (LIT) to share lessons learned.

Industrial Hygiene Program: The Industrial Hygiene Working Group performs a yearly self assessment of the Industrial Hygiene Program. The purpose of this self-assessment is to evaluate the IH Program to determine how it currently provides and delivers IH services to the line in support of their mission. The IH program is the professional resource used by the line management to protect the health of it's employees. The first IH Program Self-assessment was performed in November 1996. The IH Program baseline score achieved during this first assessment was a 54% out of a possible 100%. The process for the IH Program self-assessment are included as Attachment 12.

During December 3 through December 17 the IH Working Group will be conducting a second self-assessment of the IH Program. This self-assessment will be compared against the assessment performed in November 1996.

Industrial Hygiene Occupational Exposure Assessments: The Occupational Exposure Assessment (OEA) is strategy for identification, evaluation, documentation and prioritization of industrial hygiene hazards for SNL workers at all SNL sites. The OEA strategy includes Industrial Hygiene (IH) walk-through and risk ranking procedures. The purpose of this strategy is to identify and document existing and potential occupational health hazards through: knowledge and assessment of the operations; periodic walk-through surveys; and maintenance of a hazards inventory or tracking system. Walk-throughs are ongoing and are conducted on a periodic basis as defined by the IH working group. The results of all walk-throughs are documented in the OEA database maintained by the Industrial Hygiene Line support Organization. All subsequent occupational exposure assessments or monitoring needs identified by the walk-throughs are documented in an Industrial Hygiene Investigation Report (IHIR) and are available through the ES&H Records Center.

Building Manager Walk-throughs: The Division Coordinators and Building Managers for the respective Divisions perform monthly walk-throughs of their active, deactive, shutdown, or standby buildings. The purpose of these walk-throughs is to ensure that the facility is maintained appropriately and to ensure that new hazards are not introduced. The results of these walk-throughs are reported on a quarterly basis to the DOE by the Compliance and Metrics Department. They are also available at the following URL: <http://eshlibrary.sandia.gov/reports.htm>.

All vulnerabilities identified during these self assessments are immediately corrected if feasible. If immediate correction is not feasible, plans for correction are developed and implemented.

Section 3

Technical Competence of Technical Staff

Assess the technical competence of the technical staff responsible for ES&H.

An "Integrated Safety Management Evaluation of the Sandia National Laboratories, New Mexico" was conducted between July and August 1997 by the Office of the Deputy Assistant Secretary for Oversight. One of the elements reviewed for safety management during this evaluation, that of "competence of personnel with ES&H and safety management responsibilities." The guiding principle of this element is that personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibility relative to ES&H.

The results of their findings on this Integrated Safety Management element were:

- SNL Managers and staff generally have appropriate backgrounds and considerable experience.
- Deploying ES&H resources to line organizations is a major element of SNL's strategic approach for integrated safety management.
- The effectiveness of training programs is limited by such factors as insufficient use of job qualification training for most SNL personnel with ES&H responsibilities.
- Training requirements for subcontractors do not adequately address subcontractors on short-duration assignments.

Overall, this evaluation found that SNL Management and staff "exhibited sufficient technical competence, experience, skill mix and knowledge of hazards to effectively and safely manage the various research, weapons, and production-related programs". Identified as an area for improvement was to "Strengthen the implementation of SNL sitewide training."

Although the SNL work force has been gradually reduced over recent years, it continues to benefit from the strong academic credentials and technical backgrounds of the staff. Restructuring of the workforce to matrix ES&H professionals into line organizations enhances ES&H capability of the line organizations. In addition, competency in SNL employees is strengthened through training courses provided in part by a centralized Corporate Training and Development group and by line divisions and departments. This group provides sitewide, cross-cutting, performance-based training while line organizations provide less rigorous specialized and on-the-job training to their workers. Currently the Corporate Training and Development group is evaluating many of the site-wide ES&H training courses for adequacy and feasibility of the training.

This ES&H Training Catalog is a tool to assist managers in determining the training needs of their employees. It contains course descriptions of all currently available ES&H training. Managers or authorized delegates shall use their best judgment to determine what training is needed for SNL personnel based on job assignment and the work environment. The Division ES&H Teams are available to consult with managers regarding training needs. Managers should also discuss training needs with SNL personnel to ensure that appropriate requirements are met.

The Training Educational Development System (TEDS) is a sitewide automated database implemented in 1997 to help managers track employee training requirements and qualifications and to schedule training programs. Managers can request a variety of reports to track status of completed training, retraining dates, "no shows" and out-of-compliance workers. SNL senior management uses this tool to reinforce the importance of training by holding managers accountable for worker qualification and requiring

justifications for missing required ES&H training. A review of the corporate ES&H training compliance rate for December 5, 1997 is reported in Table 4. Overall 95% of all personnel are in compliance with corporate required ES&H Training and 96% are in compliance with organization specific ES&H training as of December 5, 1997. In addition a review of the compliance rate for 7500 ES&H Center, for the same period, is listed in Table 5 and 6. Overall 99 % of all personnel in Division 7500 are in compliance with corporate required ES&H Training and 97% are in compliance with organizational required ES&H Training as of November 26, 1997.

TABLE 4

Corporate Rollup – Rate of Compliance

Organization	Corporate Required ES&H Training	Organization Required ES&H Training
00000	83	100
01000	96	97
02000	98	97
03000	98	65
04000	97	90
05000	97	97
06000	97	96
07000	99	96
08000	97	97
09000	93	94
10000	98	78
11000	99	100
12000	98	98
14000	97	97
15000	98	100
TOTAL	96	95

ES&H Corporate Rollup Compliance Report Data as of 12/5/97

TABLE 5

Center Rollup – Rate of Compliance

Organization	Corporate Required ES&H Training	Organization Required ES&H Training
07000	98	100
07400	99	100
07500	99	97
07800	98	95
07900	99	99

ES&H Center Rollup Compliance Report Data as of 12/5/97

TABLE 6**7500 Center Compliance Rate**

Organization	Corporate Required Training	Organization Required Training
07500	100	100
07501	100	100
07511	100	100
07521	98	96
07522	98	96
07523	98	96
07524	98	96
07525	98	96
07526	98	96
07527	98	96
07571	99	97
07572	99	97
07575	99	97
07577	99	97
07578	99	97

ES&H Center Rollup Compliance Report

Data as of 12/5/97

Section 3

Status of Additional Pena Initiatives

August 4 – Assessment of "Lessons Learned" program

In response to Secretary Pena's memo of August 4, 1997 we were tasked to "Evaluate SNL "Lessons Learned" and Occurrence Reporting programs to assure the 1) outgoing information is well characterized and properly summarized, and 2) incoming information is thoroughly evaluated, properly disseminated, appropriately implemented, and tracked through formal management systems. Detail your process that will assure that all SNL functional areas will continue to receive and implement "lessons learned".

At SNL/NM the incoming information for the Lessons Learned program is from a variety of sources:

- SNL employees and contractors
- DOE ListServer
- Occurrence reports, both SNL and other DOE Contractors
- Safety bulletins
- newspaper and magazine articles, etc.

This information is evaluated by the Lessons Learned program leader, subject matter experts, line representatives, and others as appropriate for applicability to SNL operations. The information is then summarized, reformatted, augmented, etc. as needed and disseminated by numerous methods, including:

- The Porcelain Press,
- Incident of the Month,
- ListServer forwarding, inside SNL,
- ListServer posting, to the DOE-wide complex,
- Standing Safety Committee meetings and communications, and
- Formal reports

In addition, SNL is investigating integrating lessons learned into the corporate PHS process to facilitate automatic and targeted distribution of information based on hazards.

The majority of lessons learned information does not require tracking and feedback. However, if a specific event or item of information is deemed worthy of formal response with feedback and tracking, a Critical Action Team can be initiated to investigate and follow-through on these individual matters.

August 27 – Timely Notification of Emergencies and Significant Events

In response to Secretary Pena's Memo dated August 27, 1997 we have been asked to work with the DOE towards reinforcing to senior management the importance of timely event recognition and notification. A response to DOE/HQ through DOE/AL was made by DOE/KAO regarding timely recognition and notifications of emergency events as it pertains to SNL on September 23, 1997. In their response DOE/KAO noted that many of the actions stated in the directive were initiated at SNL prior to the directive being issued as part of a continuous improvement process in Emergency Management.

Furthermore, as part of SNL's commitment to mitigate this vulnerability training on appropriate and timely notification of emergencies and significant events was given to SNL's Senior Management Representatives (SMR) during a quarterly training retreat held on December 4, 1997. The details of the training are included in Attachment 13. In addition the SMRs were given the attached Guidelines for Executive Notifications (Attachment 14).

August 27 – Lessons Learned from the Emergency Response to the May 14, 1997 explosion at Hanford's Plutonium Reclamation Facility

In response to Secretary Pena's Memo dated August 27, 1997 we have been tasked to work with the DOE to implement lessons learned from the emergency response to the accident at the Plutonium Reclamation Facility on May 14, 1997. SNL's response to the May 14, 1997 Hanford Plutonium Reclamation Facility explosion has included a distribution of information for the purpose of learning lessons in the expectation of preventing similar events. The initial information received through the DOE listserver was disseminated through the Line Implementation Working Group and targeted the line organizations.

A draft procedure is being reviewed by management to initiate a process for significant non-SNL incidents, such as this one in which a Critical Action Team gathers information concerning the potential for a similar incident occurring and makes recommendations for action items to mitigate the risks of such a similar incident. An element of follow-up, feedback, and tracking is also to be included in this procedure.

October 21 – Assessment of Hazards Associated with Chemical and Radioactive Waste Storage Tanks and Ancillary Equipment

As discussed earlier in the document, the Building Managers at SNL are performing a detailed search of all SNL/NM facilities for any previously unidentified or unregistered Underground Storage Tanks. The Sub-site Management Department (7924) is coordinating the UST search effort. The Environmental and Emergency Management Department (7575) is collecting the information and in conjunction with the Compliance and Metrics Department (7511), is providing a regulatory review of each tank.

As of 12/1/97, we have located the following tanks during the current search effort:

Building 6523	3,000 gallon hydraulic fluid system
Building 6505	UST with approximately 300 gallons of liquid sampled 11/3/97
Building 840	Arco 521 Quench oil tank
Building 840	water quenching bath
Building 6536	water
Building 831	emergency decon UST

We suspect tanks at the following locations:

Building 6610	fuel oil
Building 6560	fuel oil
Building 891	2(?) 12,000 gallon water, glycol and inhibitor USTs reported
Tech Area IV	2 waste oil tanks and several water tanks
Tech Area V	report due 12/5/97

Any unknown material stored in a UST will be analyzed and dealt with appropriately. Waste material will be handled in accordance with SNL policy. All UST systems that require registration will be properly registered with the UST Bureau and either brought into compliance or closed as mandated by the regulations. Systems out of service are included in our survey.

The end result of the UST search will be a comprehensive list of all known underground tanks, including: point of contact, tank contents, and regulatory status at SNL/NM. A final report should be delivered to DOE/KAO in mid January.

This completes our response to Secretary Pena's directives identified in his August 4, 1997 Memo "DOE response to the May 14, 1997 explosion at Hanford's Plutonium Reclamation Facility"

ATTACHMENT 2

Memo to the Line Implementation Working Group (LIWG) Division Coordinators tasking them with verifying the data in the shutdown and standby databases.

Author: Terri A Lovato at MailHubMS
Date: 12/8/97 12:18 PM
Priority: Normal
Receipt Requested
TO: Melecita M Archuleta at PO821CC1
Subject: FW: Request for Information From ES&H Coordinators

----- Message Contents -----

From: Tolendino, Chris D
Sent: Wednesday, November 19, 1997 1:51 PM
To: Bendure, Albert O; Forbes, Betsy; Guth, John R; Jenkins, William L;
Lovato, Terri A; Schwartz, Barry M; Scott-Patterson, Elizabeth; Welberry,
Robert J; Yeager, Gary; Banwart, Robert; Bramlette, Taz; Campbell-Domme,
Bess; Coy, Margaret E; Davis, Allison C; Glassman, Elsa J; Krauss, Becky;
Lamb, Carla J; Sainsbury, Patty; Sanderville, Kay; Troen, Linda;
Weissman, Suzanne; Worden, Linda; Paul D Yourick; Zawadzka, Jerry
Subject: FW: Request for Information From ES&H Coordinators
Importance: High

LIWGers - NOTE THE SHORT TURNAROUND TIME

----- Forward Header -----

Subject: FW: Request for Information From ES&H Coordinators
Author: Terri A Lovato at MailHubMS
Date: 11/19/97 1:36 PM

Chris,
Please distribute this request to LIWG members. There is a critical
action date on Tuesday, November 25 for information. It is important
that a response be received from each coordinator even if the response is
"we have no facilities that meet this criteria". Questions about the
response itself should go to Melecita Archuleta at 845-9051. Questions
concerning the deadline should come directly to me at 284-3298 or pager
2849.

From: Archuleta, Melecita M
Sent: Wednesday, November 19, 1997 8:37 AM
To: Lovato, Terri A
Subject: Request for Information From ES&H Coordinators
Importance: High

ES&H Coordinators,

In response to the May 14, 1997 explosion at Hanford's Plutonium
Reclamation Facility, Secretary Pena issued a memo dated August 4,
1997. In this memo, Secretary Pena has tasked the DOE and their
contractors to implement some broad initiatives relative to his
concern over similar incidents occurring at other DOE sites and to
report to him on our progress by the end of the year.

One of these initiatives involves the following:

- First that we identify facilities that have been shutdown, are in standby, are being deactivated, or have otherwise changed their conventional mode of operation in the last few years.

Then at these facilities we are tasked to:

- * assess the status of our known vulnerabilities (chemical and radiological) at these sites.
- * evaluate these facilities for chemicals or chemical residuals that have the potential for significant explosion, fire, or toxic release.
- * and, should we find unneeded materials (chemical and radiological) we must dispose of them appropriately.

The committee working on answering this initiative has negotiated with the DOE for our response. Our plan is to use the information that we

have available to answer Secretary Pena's concerns rather than do a site wide self assessment like the last Chemical Vulnerability Review.

In addition we plan to discuss and describe the processes we have in place at SNL to ensure that all vulnerabilities are identified and dealt with on a routine basis.

However, we will need to assure the DOE that we have identified all shutdown or deactivated buildings and that we are knowledgeable about the chemicals or chemical residuals that they contain. This is where we need your help!!

We need your help to identify decommissioned, or shutdown buildings and to assess the chemicals and chemical residuals contained in them.

Currently Sites Planning Department, 7931, has a database of information regarding the Decontamination, Decommissioning, Demolition, and Reuse of buildings at SNL. These databases are contained on the IRN at the following site:

<http://www-irn.sandia.gov/organization/div7000/ctr7900/dept7931/d3r/d>

3

rhome.htm.

Please look at the information at this site, for your organization and send to me the following information by close of business Tuesday, November 25, 1997:

- * Is this information accurate for the buildings your center is responsible for maintaining?

- * Are there other buildings that are in shutdown, in standby, are being deactivated, or have otherwise changed their conventional mode of operation since September, 1994 (last Chemical Vulnerability Review) and that are not on these databases. If so, what are the buildings, where is that information kept, and who is the owner of that

* Have you recently or do you routinely (since September 1994) perform a self assessment of these buildings looking for potential hazardous materials? If so please send me the results of any evaluations that have recently taken place. This is the time to take credit for self assessments.

I need this information as soon as possible (COB, Tuesday, November 25th) and apologize for not requesting this through a LIWG Meeting. However, your last meeting which I was scheduled to discuss this at, was canceled and you will not meet again until November 25, 1997. This report to KAO/DOE is due December 10, 1997. Your help is

GREATLY appreciated.

Please call me at 845-9051 or Terri Lovato at 284-3298 if you have any questions.

Thank you for your help, Melecita Archuleta, MS1094.


ATTACHMENT 3

Memo from J.D. Martin for M.L. Jones to Liz Roybal, DOE/AL requesting closure of the June 20-24, 1994 Plutonium ES&H Vulnerability Assessment of Sandia National Laboratories.



Sandia National Laboratories

Operated for the U.S. Department of Energy by
Sandia Corporation

LOCKHEED MARTIN 

Albuquerque, NM 87185-0361
Livermore, CA 94551-0669

Phone: (505) 845-8368
Fax: (505) 844-8617
Internet: mjones@sandia.gov

M. Lynn Jones
Vice President/Laboratories Services Division

May 31, 1996

Ms. Liz Roybal, Acting Director
Nuclear Safety Division
U.S. Department of Energy
Albuquerque Office
Albuquerque, NM 87185

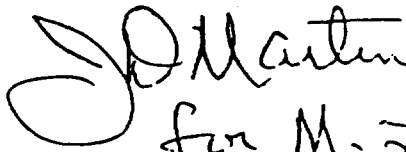
Through: **Michael J. Zamorski, Acting Area Manager**
Kirtland Area Office
U.S. Department of Energy
P. O. Box 5400
Albuquerque, NM 87115

Dear Ms. Roybal:

Subject: Closure of the June 20-24, 1994 Plutonium ES&H Vulnerability Assessment of Sandia National Laboratories, New Mexico

This is a letter of transmittal closing out the Plutonium ES&H Vulnerability Assessment of Sandia National Laboratories, New Mexico. All milestones associated with the SNL/NM Management Response Plan have been completed. This should officially close out the Plutonium ES&H Vulnerability Assessment.

Sincerely,


for M. L. Jones

Attachment: Memo, John Sichler, MS 1116, to Terri Lovato, MS 0369, subj: Transfer of Plutonium Metal Disk to Los Alamos National Laboratory, dtd 5/29/96 (Milestone No. 6 of SNL/NM2)

Copies to:
MS 0184 John Myers, OB, DOE/KAO
MS 1396 Steve Payne, SPD, DOE/AL

Exceptional Service in the National Interest

ATTACHMENT 4

Memo from John Sichler to Terri Lovato on the Transfer of Plutonium Metal Disk to Los Alamos National Laboratory.

date: May 29, 1996
to: Terri Lovato, MS 0369

from:  John Sichler, MS 1116

subject: Transfer of Plutonium Metal Disk to Los Alamos National Laboratory (U)

The plutonium-239 metal disk identified as an potential vulnerability during the 1994 Plutonium ES&H Plutonium Vulnerability Assessment has been shipped to Los Alamos National Laboratory (LANL). The shipment of this item to LANL completes all milestones associated with the corrective action number *SNL/NM 2: The uncharacterized storage of plutonium metal disk*, outlined in the Management Response Plan for the Plutonium ES&H Vulnerability Assessment. I believe this corrective action can now be closed.

If you have any questions or comments, give me a call at 844-7150.

cc:
MS 1396 S. S. Payne
MS 0184 R. R. Adair
MS 0461 E. Scott-Patterson
MS 0570 H. M. Sanger
MS 1141 D. J. Bragg
MS 1116 J. L. Sichler
MS 1116 Day File
MS 1116 File 19.1.3

ATTACHMENT 5

Memorandum of Agreement between the Materials Systems and Security Audits department and the Radioactive Source control Department regarding the lack of a safety inspection program.

Sandia National Laboratories

Albuquerque, New Mexico 87185

date: December 2, 1994

to: Terri A. Loyato, MS1065 (7254)

DJ Thompson

from: Daniel J. Thompson, MS1095 (7713)

subject: Response to Institutional Vulnerability Identified in the Plutonium Vulnerability Assessment
Performed in June 1994.

The following is in response to the institutional vulnerability regarding the lack of integrity testing for Special Nuclear Material (SNM) sealed sources. After a meeting on November 4, 1994 between the project leader for SNM Accountability Measurements, Tania Hake, of Department 7442 and the program owner for Radioactive Source Control, Sheryl Henry, 7713, an agreement to correct the situation was been reached. Ms. Hake has since discussed this with Eugene A. Marquez, Manager of Department 7442, who concurred with the agreement. A Memorandum of Agreement (MOA) will be written to document this agreement in the near future.

The details of the agreement are as follows:

- As specified in SNL Radiological Protection Administrative Procedure MN-09, SNM and classified sources shall be controlled in programs that meet all of the requirements of the Radioactive Source Control Program or equivalent. This program implements the requirements of DOE Notice 5400.9 and the DOE Radiological Control Manual.
- The physical locations of SNM materials that are accountable under DOE Order 5633.3B are tracked by department 7442 personnel. 7442 indicates that their tracking program meets the above requirements except for the performance of routine integrity testing. SNM materials that are not covered under DOE Order 5633.3B are accountable under DOE Notice 5400.9 and are included in the Radioactive Source Control Program administered by department 7713.
- The Radioactive Source Control Program will use the SNM identification number to identify the SNM sources accountable under DOE Order 5633.3B. The Radioactive Source Control Program will identify when these sources are due for integrity testing, and will maintain the records of the integrity test results.
- The Source Registrar or designee, from Department 7713, will notify Department 7442 and the SNM Custodians when SNM sources that are accountable under DOE Order 5633.3B require integrity testing.
- The custodians are responsible for scheduling the performance of the integrity testing with the Radiation Protection Operations Department, 7714. This testing will be coordinated with the Department 7442 staff when appropriate.

This agreement will correct the above identified institutional vulnerability. If you require additional information or have questions feel free to contact Sheryl Henry, of my staff, at 844-0888.

SAH:1095

Copy to:

MS0405 Tania M. Hake, 7442
MS1093 William G. Rhodes, 7714
MS1095 Sheryl A. Henry, 7442
MS1116 Eugene A. Marquez, 7442

ATTACHMENT 6

**Detailed Milestone Status report on Chemical Safety Vulnerability Review for
Vulnerability SNL/NM FM-01.**

Detailed Milestone Status Report

SIMS Id	Issue	C.A.	Finding Number	Owner
A-193-1994-1	1	1	CSV-R-SNL/NM-FM-01	Martin, Jimmie D., 07000 MS-

Issue Description: Inadequate integrated work control of maintenance and construction activities in multiuser facilities.

*** Note *** (08-08-1996) Completion Certificate sent to J.D. Martin on 8/8/96.
Completion Certificate submitted to DOE on 8/14/1996.

I have reviewed all of the evidence listed in this report, and request this corrective action be completed.

Issue Owner's Signature _____	Date of Signature _____	448-30-4174 Social Security Number
-------------------------------	-------------------------	---------------------------------------

No	Milestone Description	Target Dt	Complete Dt	Id Evidence Title
1	Presentation of the Zone Management concept to the Sandia Line Implementation Working Group.	08/31/1994	08/31/1994	
2	Fully define roles and responsibilities and prepare Job Descriptions for Zone Managers.	05/30/1995	05/22/1995	
3	Present Zone Management Plan to Senior SNL Management.	10/31/1994	09/30/1994	
4	Fully develop and implement Zone Management Plan.	12/31/1995	08/01/1996	

Sandia National Laboratories

P. O. Box 5800
Albuquerque, New Mexico 87185-MS0407

Managed and Operated by Sandia Corporation
a Lockheed Martin Company

Date: August 14, 1996

Refer to: SNL/NM-96-0109

To: Area Manager, Kirtland Area Office
U.S. Department of Energy
Kirtland Area Office/MS0184
P.O. Box 5400
Albuquerque, NM 87185-5400

Attention: George Laskar

Subject: Chemical Safety Vulnerability Review (CSV) Field Verification, SNL/NM
(A-193-1994-1)

Enclosure: Certificate of Completion

Dear Mr. Laskar:

Attached for your review and approval is a Certificate of Completion for Finding
CSV-SNL/NM-FM-01 for the subject appraisal.

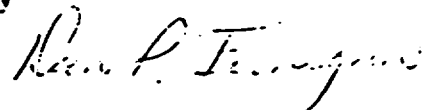
Please forward a copy of the approved Certificate of Completion to Cherie Zanders. 15106/MS-0407.

If you should have any questions, please contact J.D. Martin at (505) 845-9315.

Very truly yours.

SANDIA CORPORATION

By



Dan P. Finnegan, Manager
Appraisal Management Office
Department 15106/MS-0407

Copy to:
A-193-1994-1 Appraisal File
MS-1371 Carol Aguilar

Completion Certificate

Assessment Title: Chemical Safety Vulnerability Review (CSV) Field Verification, SNL/NM

SIMS Id: A-193-1994-1

Start Date: 05/16/1994

End Date: 05/25/1994

Finding Number: CSV-SNL/NM-FM-01

Finding: Inadequate integrated work control of maintenance and construction activities in multiuser facilities.

Completion Date:

Action Summary: Integration of work control of maintenance and construction activities in multi-user facilities must have, as a fundamental pre-requisite, defined ownership of the facilities which is clear, unambiguous, and known to all. Ownership must be based on the most stable foundation Sandia has, and the most unchanging entity in the Sandia framework is real property. Real property boundaries are precise, permanent, can be clearly drawn, easily marked and readily understood. Once defined, real property is unambiguous. We believe that a system of "Zone Management" is the best method for constructing an unambiguous ownership structure. Integration of maintenance activities, storage, property control and similar activities with ongoing operations and activities within a facility is the primary purpose for establishing the Zone Management Concept. In this system, specific individuals are assigned full-time management responsibility for specific, clearly defined areas. It is important to point out that this approach is conceptual. However, preliminary work causes us to believe it is the proper approach to the ownership problem which is at the root of many integration problems. Sandia is pursuing the Zone Management concept and has created a team to work under the leadership of the Sites Operations Director to fully develop this ownership concept.

Certification:

A. Appraised Organization Certification

I hereby certify that the corrective action agreed to for the above finding has been completed and request the finding be closed out.

Martin Jimmie D., 07300

3/12/96
Date

B. DOE/KAO Office

I have verified that the corrective action taken to address the finding has been completed and do hereby recommend closure.

(Name/Title)

Date

C. Responsible DOE Office

I have verified that the corrective action taken to address the finding has been completed. The above finding is hereby closed.

(Name/Title)

Date

ATTACHMENT 7

**DRAFT request for change to action plan for Chemical Safety Vulnerability Review
Vulnerability SNL/NM FM-03.**

Sandia National Laboratories

P.O. Box 5800
Albuquerque, New Mexico 87185-0833

Managed and Operated by Sandia Corporation
a subsidiary of Martin Marietta Corporation

November 17, 1997

DOE-KAO

Attn: Ronald J. Simonton
Albuquerque, NM

Subject: Chemical Vulnerability
Changes to Action Plan

**Chemical Vulnerability
Request for Change to Action Plan**

This memo is a request to change to the Chemical Safety Vulnerability Review Management Response Plan and specifically a request for changes to milestone 6, and milestones 8 through 16 under Vulnerability No. 3 (CSVN-SNL/NM-FM-03) titled "Inadequate configuration management in aging facilities".

The original milestones 8-16 involved the development and implementation of a "Configuration Management Program" using a risk based graded approach. While SNL understands and appreciates the benefits that a Configuration Management Program could offer, in particular as they relate to chemical vulnerability, we feel that similar results could be achieved by applying many CM techniques along with best business practices to our facilities management program.

The benefits to this approach are a simpler more flexible program that requires less overhead to develop and implement, is easier to understand by SNL personnel already familiar with existing processes and organizations, and is more adaptable to our ever changing business needs. The revised actions that are being proposed consist of a combination of strengthening existing processes, reorganizing some facilities structures, and establishing new process/roles/responsibilities. Since efforts to correct potential deficiencies have been on going for many years, some of the action items predate the Chemical Safety Vulnerability Review performed in 1994.

Please refer to the attached table that list the new action items numbered 8 through 23. These action items would replace the original action item number 6 and action items 8 through 16. All of the actions being proposed are either complete or are in the later stages of implementation. This document will describe the changes to the facilities management program, explain how SNL expects to reduce Chemical Vulnerability through these changes, and provide a status and schedule for implementation of each change.

Milestone No. 6 was to review maintenance records of exhaust systems greater than five years old and to determine failure trends that would indicate a need for increased frequency of maintenance or to identify problematic components. It has been determined that the previous computer system used at SNL for managing maintenance activities (Automated Maintenance Management) did not record and

DRAFT

track failures by systems separate from routine maintenance performed on individual components. The facilities operations engineering organization was responsible for assisting maintenance organizations in solving systematic problems reported by building mechanics. We are not aware of any significant trends of failures of exhaust system components. A new computerized maintenance management system called MAXIMO which has the capability to track failures by systems was put in use in 1995. Systems engineers will be trained on how to use this computer system as a diagnostic tool to notify of abnormal failure rates for better planning of maintenance activities and for feedback to engineering designers. New milestone No. 21 would replace existing milestone No. 6.

The proposed new action items are divided by *Organizational, Planning and Design, Construction, and Operations*. With the exception of milestone No. 19 (Lease agreements) and milestone No. 21 (Failure rate tracking), all items have been completed. The last item of this vulnerability is planned to be complete by October of 1998.

If you have any questions with this proposal please call me at 844-3553 or by E-Mail at ambaca@sandia.gov.

Sincerely,

Anthony Baca, 7823

copies;

Ed Graham, 7800 M/S 0938 w/attach.
Rick Romero, 7933 M/S 0948 w/attach.
Terri Lovato, 7521 M/S 1050 w/attach.
Melecita Archuleta, 7524 M/S 1094 w/attach.

Chemical Vulnerability Revised Action Plan

Configuration Management

M.S.	M.S. Status	Target Date	Milestone Description	Expected Effect on Chemical Vulnerability
Organizational				
8	Complete	10/1/96	Re-engineer the Facilities Business Unit (Planning, Maintenance, Technical Services, Subsites, and Support Services) to provide improved customer focus and integrated configuration/work controls.	Provide improved customer focus and integrated configuration/work control
9	Complete	5/1/97	Assign a facilities building manager to every facility to team with line organizations	Improve communications, awareness and planning/coordination of activities affecting line organizations and facilities organizations including identifying critical and important systems and negotiate responsibilities.
10	Complete	10/1/96	Establish systems engineering organizations	Provide technical ownership and control of design basis information.
Planning & Design				
11	Complete	10/1/97	Establish a process that require line organizations that work with chemicals to work with industrial hygiene to identify hazards and determine requirements when changes are first proposed.	Determine the design basis for each situation.
12	Complete	1/1/93	Perform Building Modification Hazard Analysis (BMHA) to evaluate hazards and determine means of protection.	Provide better protection to construction and maintenance workers and identify removal and remediation requirements.
13	Complete	10/1/97	Design LEV systems to accepted methods for standard exhaust situations and to have all non-standard situations evaluated and approved by industrial hygiene.	Determine appropriate design requirements.
14		1/1/90	Equip all fume hoods with a flow indication device.	Provide a means for the fume hood user to determine if the exhaust system is working properly.
15	Complete	1/1/85	Created accurate LEV system schematics of complex systems and revise schematics whenever changes are made for an LEV system.	Provide a better understanding of how the system is configured and a better relationship between the connected load and the available system capacity.
Construction				
16	Complete	1/1/80	Inspect construction of LEV systems to determine that construction meets the design. Approve all changes that take place during construction and document any changes.	Insure that systems are constructed in accordance with the design requirements and that any changes are evaluated and documented.

17	Complete	1/1/85	Coordinate and inform building occupants and other contractors of planned construction modifications. This process was enhanced with the assignment of building managers to each facility.	Reduce the risk to occupants and other construction workers caused by an LEV system being shut down for modifications.
18	Complete	1/1/80	Test and Balance all new LEV systems and modifications to systems to certify the performance prior to use. Have all Test and Balance reports reviewed and approved by a facilities designer or systems engineer.	Insure that the system is capable of meeting the design requirements.
Operations				
19		10/1/98	Prepare lease agreements that establish ownership and set responsibilities for 50% of the square footage at SNL/NM	Establish and document ownership and determine requirements and support responsibilities.
20	Complete	7/1/97	Perform critical systems analysis on high risk facilities and use as a basis for the maintenance plan.	Identify critical components that may require increased levels of maintenance or additional redundancy.
21	Complete	7/1/98	Setup a computer based maintenance management and tracking system to track failure rates of critical exhaust systems. Track failure frequencies and perform systems engineering analysis.	Implementation of new computer software titled MAXIMO now has the capabilities to better manage maintenance activities and track failures to systems. Systems engineers will gradually be trained on how to use the system.
22	Complete	1/1/85	Annually test and balance exhaust hoods in LEV systems and report deficiencies to IH and systems engineering.	Continually evaluate system performance and take corrective actions to correct deficiencies
23	Complete	1/1/97	Have building managers notify building occupants on planned maintenance activities.	Reduce the risk to occupants due to a system outage .

ATTACHMENT 8

Buildings from the Shutdown, Stand-by and Hot-list

ATTACHMENT 8

TABLE 2

Buildings with 10 or More Entries in ChemMaster

Facilities	No. of Entries in ChemMaster	Facilities	No. of Entries in ChemMaster
880	19	849	122
6020	16	855	23
6542	136	857	63
6555	34	860	293
6571	30	861	14
6600	18	863	31
6644	163	864	784
6715	86	865	472
6736	14	867C	89
6743	120	868	118
9939	82	869	909
9967	128	872	32
9978	24	875/876	201
9981	290	880	498
10510	18	887	603
605/Steam	58	888	33
642	34	890	843
6505 (III)	27	891	774
6630 (III)	303	892	136
802	47	935	41
808	283	959	13
809	107	963	135
820	96	981	558
821	63	986	273
826	35	ALCD Site	12
827	352	B6969	86
828	106	BDM	124
831/Medical	38	Facility	403
833	49	MO107	43
835	20	MO211	39
840	1142	MO266	24
841	149	MOF/Janit	40
842	68	T29	54
847	22	T46	48

ATTACHMENT 8

TABLE 1

Buildings from the Shut-down, Stand-by, and Hot-List Lists

Buildings on the Shut-down list:

888
6526
6570
6710
6730
6736*
6741
6743 *

Buildings on the Stand-by list:

828*
863*
906
907
913
919
922
935 *
9990
639
642

Buildings on the Hot-list:

802*
821*
836
848
859
868*
872*
877
880*
890*
895
9981

BDM
MO211*
MO214
MO215
MO219
MO246
MO247
T23
T29*
T32
T46
T47

Note: Buildings with an * have more than 10 chemicals currently listed in their ChemMaster Inventory

ATTACHMENT 9

Status of Known Underground Storage Tanks at SNL/NM site.

UNDERGROUND STORAGE TANKS

Location	Capacity	Installed	Remarks
----------	----------	-----------	---------

A-1

605-7	1,000 Gal Fuel Oil	1968	REMOVED 11/91
605-8	12,000 GAL FUEL OIL	1956	REMOVED 11/91
605-9	12,000 GAL FUEL OIL	1956	REMOVED 11/91
605-10	12,000 GAL FUEL OIL	1956	REMOVED 11/91
605-11	12,000 GAL FUEL OIL	1956	REMOVED 11/91
605-12	5,264 GAL HEAT TRAN-OIL	1978	REMOVED 05/90
605-13	7,897 GAL HEAT TRAN-OIL	0	REMOVED 05/90
831-1	1,000 GAL EMERG. WAS/WATER	1968	DEREGIST. 03/89
840-1	500 GAL EMERG. COOL/WATER	1953	REMOVED 02/89
844-1	150 GAL TRITIATED WATER	1968	DEREGIST. 8/90
862-2	9,730 GAL FUEL OIL	1987	Emergency Gen. Tank
867-1	4,000 GAL NEUTRALIZATION TK	1973	DEREGIST. 0/90
876-1	1,000 GAL WASTE OIL	1950	REMOVED 05/91
876-2	12,000GAL GASOLINE	1985	Removed 1996
876-3	12,000 GAL DIESEL	1986	Removed 1996
880-1	5,000 GAL DIESEL	1979	REMOVED 12/88
888-1	550 GAL WASTE OIL SUMP	1979	DEREGIST. 10/90
888-2	550 GAL WASTE OIL SUMP	1979	DEREGIST. 10/90
888-3	20,000 GAL TRANS. OIL	1982	CIP 2/91
888-4	20,000 GAL TRANS. OIL	1982	Active
888-5	20,000 GAL TRANS. OIL	1982	Active
888-6	20,000 GAL TRANS. OIL	1982	DEREGIST. 03/90

A-2

901 -1	120 GAL GASOLINE	1951	REMOVED 06/90
910-1	120 GAL GASOLINE	1951	REMOVED 06/90
911-1	120 GAL GASOLINE	1951	REMOVED 06/90
912-1	120 GAL GASOLINE	1951	REMOVED 06/90

A-3

6503-1	600 GAL FUEL OIL	1977	REMOVED 01/91
6505-1	560 GAL FUEL OIL	1956	REMOVED 06/90
6523	7,000 GAL hydraulic system		Registered 9/97
6525-1	560 GAL FUEL OIL	0	REMOVED 06/90
6536-1	25,000 Gal Fuel Oil	1967	REMOVED 07/89
6587-2	10,000 Gal Gasoline	1963	REMOVED 12/93
6587-3	6,000 Gal Gasoline	1963	REMOVED 11/90
6630-1	560 GAL FUEL OIL	1966	REMOVED 02/90
6720-1	560 GAL FUEL OIL	1959	REMOVED 06/89

A 4

970-1	1,000 Gal Fuel Oil	1987	DEREGIST. 12/94
970-3	1,000 Gal Waste oil	1987	DEREGIST. 04/91
983-8	60,000 GAL BROMINE WATER	1986	DEREGIST. 06/90
983-9	2,000 GAL WASTE OIL	1985	DEREGIST. 04/91

A-5

6500-1	600 GAL FUEL OIL	1976	REMOVED 01/91
--------	------------------	------	---------------

6580-5	5,000 GAL FUEL OIL	1958	DEREGIST. NON-EX
6581-1	500 GAL FUEL OIL	1958	REMOVED 07/89
6581-2	560 GAL FUEL OIL	1961	REMOVED 05/90
6588-1	5,000 GAL FUEL OIL	1978	REMOVED 09/90
6595-1	34,120 GAL TRANS-OIL	1968	REMOVED 08/91
6595-2	34,120 GAL TRANS-OIL	1968	REMOVED 08/91
6595-3	34,120 GAL TRANS-OIL	1968	REMOVED 08/91
6595-4	34 120 GAL TRANS-OIL	1968	REMOVED 08/91
6595-5	34 120 GAL TRANS-OIL	1968	REMOVED 08/91
6596-5	1,000 GAL FUEL OIL	1968	REMOVED 08/90
6597-2	25,000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-3	25 000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-4	25 000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-5	25,000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-6	25,000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-7	25,000 GAL TRANS-OIL	1972	REMOVED 04/93
6597-8	25,000 GAL TRANS-OIL	1972	REMOVED 04/93

AREA-CTF

BURNSITE-7	2,000 Gal JP-4	0	REMOVED 01/90
9832-1	650 GAL FUEL OIL	1976	REMOVED 07/90
9925-1	6,000 GAL GASOLINE	1978	REMOVED 12/92
9925-2	6,000 GAL DIESEL	1971	REMOVED 07/87
9939	3,500 GAL Ethylene Glycol		CIP 08/97
9970-1	500 GAL FUEL OIL	1973	REMOVED 06/89
9980-1	6,000 GAL FUEL OIL	1976	CIP 03/93

HAFB

882-1	110 Gal gasoline	0	REMOVED 10/90
-------	------------------	---	---------------

Igloo

6018-1	500 Gal Diesel	0	REMOVED 10/89
6028-1	5,000 GAL GASOLINE	1987	REMOVED 11/91

KTF

666-A	1,500 GAL GASOLINE	1979	REMOVED 12/89
666-B	2,000 GAL GASOLINE	1979	REMOVED 12/89
666-C	2,500 GAL GASOLINE	1991	Active

MANZANO

7570-1	1,000 Gal Fuel oil	1965	REMOVED 10/90
--------	--------------------	------	---------------

TTR

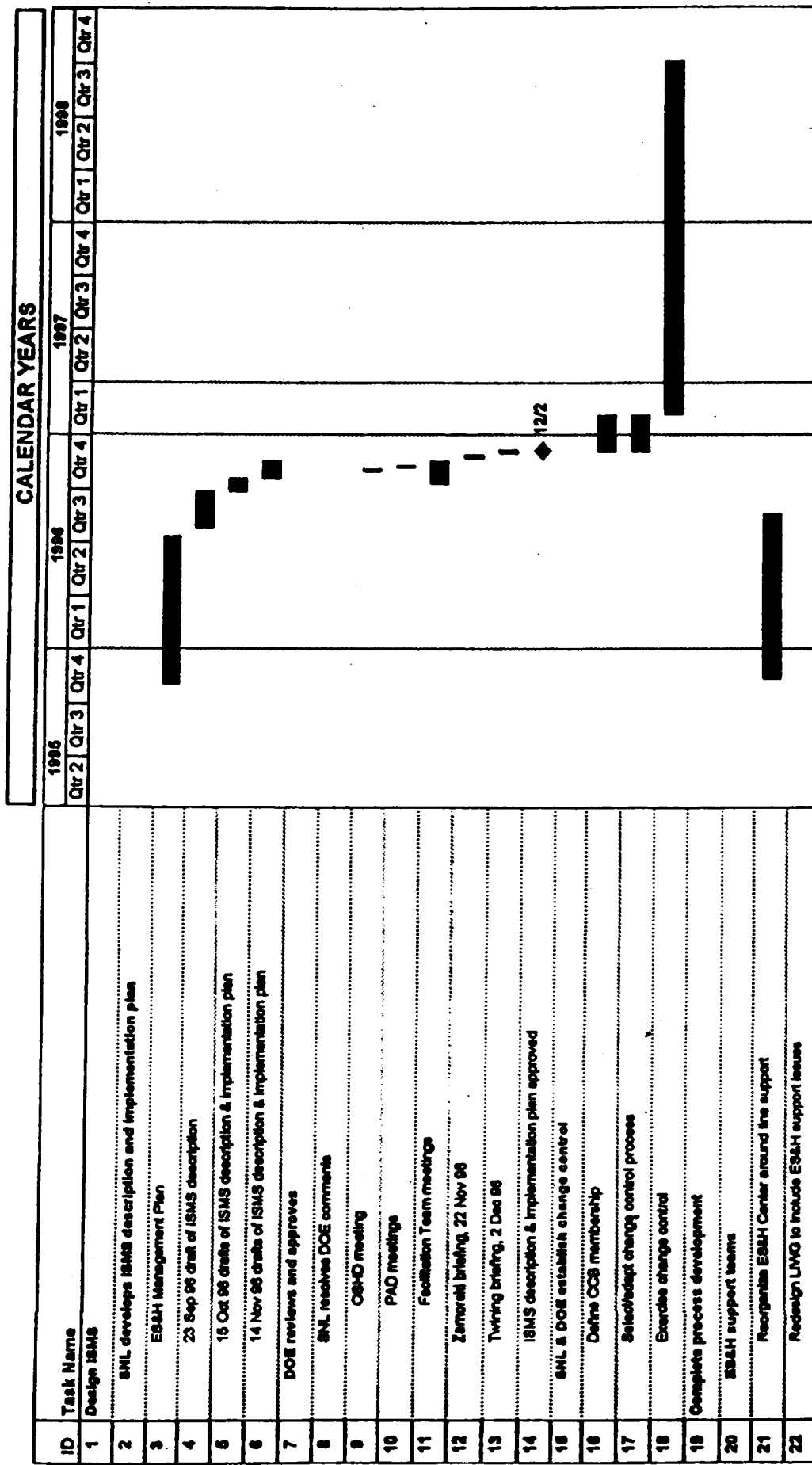
0353-1	5,000 Gal Diesel	1968	CIP 1991
0360-1	10,000 GAL UN-GASOLINE	1983	REMOVED 8/94
0360-2	10,000 GAL UN-GASOLINE	1983	REMOVED 8/94
0360-3	10,000 GAL DIESEL	1983	REMOVED 8/94
0360-4	10,000 GAL DIESEL	1983	REMOVED 8/94
0958-1	1,000 GAL DIESEL	1966	REMOVED 8/94
0963-1	100 GAL DIESEL	1986	EMERG. GEN.

CIP - Closed in Place

ATTACHMENT 10

Schedule for Developing and Implementing the Integrated Safety Management System (ISMS).

ATTACHMENT SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM



ATTACHMENT - SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM (Cont'd)

		CALENDAR YEARS											
		1996				1997				1998			
ID	Task Name	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
23	Add ES&H Customer Support Managers to LMWG												
24	Change meeting format												
25	Develop MOUs between divisions and support teams												
26	Deploy customer feedback and issue tracking system												
27	Standard, Hazard, and Control Identification												
28	Formalize directives flowdown & ISMS documentation												
29	Formalize line matrix work responsibility												
30	Deploy ISEEMS software												
31	Develop PH-S concept												
32	Beta test & release ISEEMS software v. 1.0												
33	Upgrade ISEEMS and release v. 2.0												
34	KAO reviews PH-S and HA modules of ISEEMS												
35	AL reviews PH-S and HA modules of ISEEMS												
36	Self Assessment												
37	ES&H Oversight Pilot												
38	Release "Annual Rpt of ES&H Performance at SNL, FY96"												
39	Update schedule for SNL line self assessments												
40	LOC reviews Oct-Dec 96 corp ES&H metrics & improvements												
41	LOC reviews Jan-Mar 97 corp ES&H metrics & improvements												
42	LOC reviews Apr-Jun 97 corp ES&H metrics & improvements												
43	LOC reviews Jul-Sep 97 corp ES&H metrics & improvements												

ATTACHMENT - SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM (Cont'd)

CALENDAR YEARS													
ID	Task Name	1996				1997				1998			
		Qtr 2	Qtr 3	Qtr 4		Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
44	Implement ISMS												
45	LWQline planning for implementation												
46	All divisions transition from PHAs to PHs												
47	Complete integration development												
48	Division 7000 integration on a subset of division activities												
49	Division 1000 integration on a subset of division activities												
50	Evaluate ISMS effectiveness and redesign if necessary												
51	Complete division-by-division implementation												
52	Division 7000 remaining activities												
53	Division 1000 remaining activities												
54	Division 14000: customization (3 mon) + implementation (9 mon)												
55	Division 8000: customization (3 mon) + implementation (9 mon)												
56	Division 9000: customization (3 mon) + implementation (9 mon)												
57	Division 5000: customization (3 mon) + implementation (9 mon)												
58	Division 6000: customization (3 mon) + implementation (9 mon)												
59	Division 4000: customization (3 mon) + implementation (9 mon)												
60	Division 2000: customization (3 mon) + implementation (9 mon)												
61	Office Divisions: customization (3 mon) + implementation (9 mon)												
62	Reach ISMS future state												10/1

ATTACHMENT SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM (Cont'd)

- 17 Select/adapt change control process
Consider adapting change control process used by existing DOE/SNL EM process. Consult Ted Petrock at KAO.
- 28 Formalize directives flowdown & ISMS documentation
 - "ES&H Requirements" poster
 - Update
 - Establish its position within ES&H document hierarchy
 - Release
 - SLP 2001, ES&H policy
 - Acknowledge current executive management of ES&H
 - Identify "ES&H Requirements" poster as superset of SNL standards and requirements
 - Acknowledge current ES&H organization responsibilities
 - Define ES&H responsibility of "person who directs day to day work"
 - Incorporate ISMS into SNL's ES&H document hierarchy
 - Update EH471000 from "ES&H Program Strategy" to SNL's Integrated Safety Management System"
 - Enter "SNL's ISMS Implementation Plan" as a PN (plan) document
- 29 Formalize line matrix work responsibility
Revise ES&H Manual, chapter 1
- 33 Upgrade ISEEMS and release v. 2.0
 - Complete standards and requirements flowdown from ES&H Manual
 - Add questions to determine if existing standards and requirements are sufficient
 - Add questions to determine if existing stds/rqmts are unnecessary & need exemption
 - Add authorization bases document list and required approvals
- 45 LWG/line planning for implementation
 - Seek DOE input re rollout priorities
 - Develop criteria & prioritize division implementation
 - Schedule face-to-face kickoff meetings

ATTACHMENT - SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM (Cont'd)

- 46 All division transition from PHAs to PHSs
- All organizations use ISEEMS software to conduct PHS if
 - starting a new operation
 - operating outside the authorization basis in effect on 1 Oct 96
 - existing PHA is scheduled for review in FY97 before their division's ISMS roll-out
 - existing PHA is overdue for review on 1 Oct 96
 - organization wants to try PHS
 - This task is complete when PHSs exist. The task does not require that other authorization basis documents that the PHS identifies be complete or even in process.
- 48 Division 7000 integration on a subset of division activities
- Plan
 - Choose from the following facilities/ops:
 - 7500: waste, radiological, and chem lab operations
 - 7800: transportation, explosive storage, nuclear material storage, represented workers, janitorial operations
 - 7800/7900: construction safety, electrical safety
 - 7400: protective force operations, firearm safety
 - Select & orient team
 - Do
 - Check: Evaluate results & costs/benefits
 - Correct: Improve the process
- 50 Evaluate ISMS effectiveness and redesign if necessary
- Present results of 7000 implementation to DOE, SQLC, LOC, and LIWG
 - Decide whether to proceed with further implementation or to redesign implementation
- NOTE: If further implementation must be redesigned, a redesign task would be inserted prior to division-by-division implementation tasks, and schedule changes would be addressed in the change control process.
- 51 Complete division-by-division implementation
- For tasks 54-61, "customization" is complete when all processes are defined and all systems are in place. Customization is staggered to allow efficient use of scarce resources.
 - "Implementation" is complete when processes and systems have been exercised to achieve the future state defined below. Sandia doesn't expect implementation always to take as long as shown here, but we don't want to contractually obligate ourselves to a shorter schedule without further scoping work and resources.

ATTACHMENT - SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE INTEGRATED SAFETY MANAGEMENT SYSTEM (Cont'd)

62

Reach ISMS future state

ISMS Implementation is complete when

- a) SNL's ES&H document hierarchy and tools are clearly linked to applicable laws and M&O contract directives that serve as our standards and requirements
- b) all facilities and activities are covered by PHS/ECL environmental impact and hazard identification documents identified by ISEEMS software
- c) all operations are supported by dedicated ES&H customer support teams
- d) the self-assessment process is defined and functioning
- e) facilities and activities with inadequate standards have been identified and adequate standards are being identified
- f) directives that add no value have been identified, and exemptions are being considered
- g) before a new facility or activity starts up, environmental and hazard mitigation documents are complete
- h) before a new facility or activity starts up, an authorization basis has been defined and an authorization agreement has been approved
- i) higher hazard facilities—nuclear, moderate-hazard nonnuclear, and accelerator facilities—are covered by authorization agreements

ATTACHMENT 11

Facilities containing chemicals that, if released, could cause severe health effects outside of the technical areas and containing a current HAD.

Building 823:

The Systems Research and Development Facility, Building 823, is a 144,581 square feet building built and occupied in 1982. It is constructed of structural concrete with stucco exterior walls and a flat built-up roof. Building 823 consists of four stories, a full basement and mechanical penthouse. The activities in the building include, but are not limited to, general office and computing space, as well as a variety of energy related research programs. The research activities include lab studies in geosciences and alternative energy technologies.

Building 858:

The MDL at SNL/NM was constructed in 1988 to provide laboratory space for developing radiation hardened, integrated circuits and other microelectronic applications. The MDL is a facility with over 2,787 m² (30,000 ft²) of clean room space and a fully operational equipment set for processing semiconductor wafers up to 150 mm in diameter. The MDL facility is located within Technical Area (TA-I), on 17th Street between K and M Streets. The MDL is connected to the office/light lab (O/L) by means of a corridor on the ground floor. The O/L is a two story office building with some R&D labs. The O/L has approximately 200 personnel. The MDL and O/L combined is referred to as Building 858. The MDL is surrounded by a chain link fence. The MDL is the

Building 883:

The PDFL (Photovoltaic Device Fabrication Laboratories) performs research intended to increase the cost-effectiveness of solar cells. It is a single story pre-engineered metal building with a mezzanine which covers 14,550 square feet. It contains a large mechanical assembly area with machine shops, a seal/leak test laboratory, environmental chamber, rock sample storage area. Laboratory C, on the east side in the center of 883 includes a toxic gas bunker and liquid nitrogen dewar located outside.

Building 884:

The Ion Beam Materials Research Laboratory (IBMRL) is housed in a single level building of approximately 1309 m² which includes a 110 m² addition completed in the first quarter of 1995. The IBMRL houses the Ion Beam Materials Research Group and equipment to support scientific research by scientists and technicians to experimentally determine the effects on material's properties of ion-beam irradiation and implantation, and low energy ion-beam analysis. The Ion Implantation-Physics Lab is located in Room 1 and consists of two main facilities; a keV ion-accelerator facility and a meV ion-accelerator facility.

Building 893:

This facility is used to investigate the physics of compound semiconductors and lattice structures. The facility also supports the fabrication of optoelectronic and digital compound semiconductor devices for both research and prototyping purposes. The building houses the Compound Semiconductor Research Lab (CSRL). Building 893 is a 11,852 square meter (m²) single story building with an equipment penthouse on the roof. The building is constructed with a concrete slab foundation, concrete masonry unit (CMU) exterior walls, concrete columns and beams as the primary roof support, CMU and wallboard interior walls, concrete and tile floors, suspended acoustical ceiling, and a bar joist/metal deck hypalon fabric roof.

Building 894:

Building 894, the Power Development Laboratory, is an 8,974 square meter, two-story building with a mezzanine that was constructed in 1950. The building is constructed with a concrete slab foundation, concrete brick and stucco exterior walls with a built-up roof. Building 894 serves as a research and development laboratory and office space. The research activities include the design, development and prototyping for thermal and lithium batteries, and parachutes. The Chemical Storage Building, located approximately 20 meters west of Building 894, is occupied by Sandia National Laboratories Battery Research Department and contains three chemicals of concern. The building is a prefabricated structure designed for the storage of chemicals (i.e., built in spill pan, dry fire extinguishing system operated by fusible link mechanism, etc.). Access to the building is controlled by locked doors as well as by locked cabinets inside the storage building.

Building 897:

The Integrated Material Research Laboratory (IMRL), commonly referred to as Building 897, has approximately 3,122 square meters (m²) of office space and approximately 4,316 (m²) of laboratory space for a total of approximately 7,438 (m²) of net floor space. Building 897 was completed and occupied in 1995. It is constructed of structural concrete with stucco exterior walls and a flat build-up roof. Building 897 consists of four stories, a full basement and mechanical penthouse. The activities in the building include, but are not limited to, general office and computing space, as well as a variety of material related research programs. The research activities include lab studies in chemistry, physics, and alternative energy technologies. The IMRL houses materials research programs like basic research in new electric material. Materials that are studied include materials, ceramics, organic polymers, and electronic components.

Building 960:

Building 960 houses the Reactor Support Facility containing offices and light lab which support the Inertial Confinement Fusion Program. Other light labs are used in the Work for Others research. All office areas are located along the north and south perimeter walls and laboratory space is located in the center of the building. The west entrance to the facility is manned by a security guard who controls entrance to the secured areas of the building. A security clearance or a red-badge and an escort are needed to enter the secured areas of the building.

Building 983:

This building houses the Particle Beam Fusion-Laboratory Accelerator II (PBFAII). The PBFA II is used to generate intense ion beams in support of the inertial confinement fusion program. Building 983 is a 12,043 square meter (m²) building consisting of a single story with a high-bay and a lower level area. The mission of the Pulsed Power Science Program is to produce intense pulses of energy for controlled fusion, nuclear weapon effects simulation, and directed-energy research.

AML:

The AML facility is a two story building located near the University of New Mexico. Center 1800 leases the top and bottom floors of the Southern wing for lab and office space. The 45,000 square meter laboratory opened in August 1992 and is equipped with a broad range of state-of-the-art equipment for materials synthesis, processing and characterization. The area of concern are the laboratories that occupy the second story in the Southern wing of the building. Processes and operations in the AML support the facility mission of providing a technical interface between SNL and UNM.

ATTACHMENT 12

SNL/NM Industrial Hygiene Program Self Assessment Process

SNL/NM INDUSTRIAL HYGIENE (IH) PROGRAM SELF ASSESSMENT PROCESS

Purpose: The purpose of the IH program self-assessment is to evaluate the IH program at a high level to determine how it currently provides and delivers IH services to the line in support of their mission. The IH program should be the professional resource used by line management to protect the health of it's employees. This self-assessment will compared against our baseline self-assessment performed in November 1996.

Scope: This self-assessment will be focused on our mission to provide Industrial Hygiene support to the line in a cost-effective and compliant manner. This self-assessment will not include individual IH "sub-programs". These "sub-programs" will be self-assessed at a later date as determined by the IH program.

Process Description: This self-assessment will be conducted on December 3, 1997 and December 17, 1997 during the IH working group meetings held from 1-3 p.m. in Building 823 Room 2279. The IH working group meetings are designed to provide an open forum for the IH staff to discuss and manage IH program activities and issues by consensus. This self-assessment will be conducted in this open forum using the SNL/NM Industrial Hygiene Program Self-Assessment Worksheet provided on pages 3-11 of this document. Each member of the IH staff will use this worksheet as a guide for open discussion of current IH program elements and performance measures. Initially, a score will be proposed and discussed by the IH staff. Consensus will be achieved on the score for each program element by using the rule of thumbs.(The rule of thumbs is described in the following "Process Ground Rules" section.) After consensus is reached on each program element, an overall IH program score will be computed. Major points from this self-assessment will be captured in the IH working group minutes which will receive review from the IH staff. The IH staff is asked to complete this worksheet individually in advance of the December 3, 1997 meeting. Proposed follow up activities generated from this self-assessment will be discussed and managed at future IH working group meetings. Follow up activities will be tracked and reported using a system agreed to by the IH staff.

Process Ground Rules:

- 1) Everyone participates.
- 2) 15 minutes maximum discussion per program element.
- 3) It is OK to disagree, but come to closure.
- 4) No personal shots; be constructive.
- 5) Work towards consensus. The performance measure score may not be your first choice, but you can live with it and support it outside the IH program.
- 6) Rule of Thumbs:

Thumb Up = Agree

Thumb Sideways = Not my first choice, but I can live with the score and support it

Thumb Down = Disagree, I cannot support

Consensus = All thumbs are up or sideways

SNL/NM INDUSTRIAL HYGIENE (IH) PROGRAM SELF ASSESSMENT PROCESS

Definitions:

- 1) **IH Program:** The overall purpose of an IH program is to provide a healthful working environment, that is, adequate control of physical, chemical, [musculoskeletal], and other stresses in the workplace. As described by Cralley and Cralley (1): [IH programs] should include all the functions needed in the [anticipation], recognition, evaluation, and control of occupational health hazards associated with [laboratory operations], production, office, and other work. This requires a comprehensive program designed around the nature of the operations, documented to preserve a sound retrospective record and executed in a professional manner.
- 2) **Self-Assessment:** Self-assessment has been defined as "A systematic evaluation of an organization's performance, with the objective of finding opportunities for improvement and good practices; normally performed by the people involved in the activity."(8)
- 3) **IH Staff:** All people, Sandians and contractors, supporting the IH program. (Those people attending the Wednesday IH working group meetings.)

Instructions for Using the
**SNL/NM INDUSTRIAL HYGIENE PROGRAM SELF-ASSESSMENT
WORKSHEET**

Purpose: The Industrial Hygiene (IH) program has committed to performing a high level self-assessment of its activities on December 3, 1997 and December 17, 1997. This self-assessment will be used to compare against the baseline self-assessment performed in November, 1996. To this end, this IH program self-assessment worksheet has been developed for the IH staff to use.

Intent: This worksheet is designed for easy use, useful scoring, and for consistency in program evaluation. It provides the IH staff with a tool to measure the performance of high level IH program elements and shows the path toward program improvement.

Program elements: The elements (numbers) come from the language in the 1989 OSHA Safety and Health Program Management Guidelines and the other text referenced on page 11 of this document.

Performance measures: These measures, on a scale from zero (0) to four (4), relate to the program elements and generally describe how to tell if the program element is in place and at what level.

Scoring: In order to score the performance measure on a zero (0) to four (4) scale, consider the current IH program as a whole. Using your best professional judgment, pick the score descriptor which best describes where the current IH program falls on that performance measure. Circle or mark one measure only. For score descriptors with all, majority, some, and few, use the following quantitative guideline: all = 100%, majority = 51-99%, some = 20-50% and few = < 20% of the population identified in the descriptor. If you have comments on historical IH program performance, make them in the comments section. Do the best you can in the limited time you have.

Comments: Provide examples which illustrate how the score was reached. Be specific. Be brief with comments. Stick with facts and data, not sweeping generalizations.

**SNL/NM INDUSTRIAL HYGIENE PROGRAM SELF-ASSESSMENT
WORKSHEET**

Name:

Employer:

Date:

Job function: _____

(IH program activities performed, line organizations supported, etc.)

PROGRAM ELEMENTS

PERFORMANCE MEASURES

1. Roles and responsibilities are clearly defined and documented

- (4) All IH staff can explain what performance is expected of them and all IH program roles and responsibilities appear to be assigned.
(3) Majority of IH staff can explain what performance is expected of them and most IH program roles and responsibilities are assigned.
(2) Some IH staff can explain what performance is expected of them and some IH program roles and responsibilities are assigned.
(1) Performance expectations are generally known by the IH staff.
(0) Specific job responsibilities and performance expectations are generally unknown or hard to find.

Comments: _____

2. Clear goals and objectives, documented and communicated

- (4) IH staff fully embrace IH program goals and can explain desired results and measures for achieving objectives.
(3) Majority of IH staff can explain IH program goals and desired results.
(2) Some IH staff can explain IH program goals and desired results.
(1) IH staff look to management to explain IH program goals and desired results.
(0) No apparent IH program goals and objectives exist.

Comments: _____

3. Accountability

- (4) All personnel are held accountable and all performance is addressed with appropriate consequences.
- (3) Some accountability systems are in place; but consequences used tend to be for negative performance only.
- (2) Personnel may be held accountable; but consequences rarely follow performance.
- (1) Accountability exists, but it appears to be generally hit or miss and prompted by serious negative events.
- (0) There does not appear to be any effort at accountability.

Comments: _____

**4. Routine IH program activities
(daily work)**

- (4) Clear criteria and processes exist for prioritization and performance of IH program activities.
- (3) IH program activities are performed proactively according to group consensus.
- (2) IH program activities are performed proactively according to individual IH staff professional judgment.
- (1) IH program activities are performed by IH staff in a reactive manner in response to audits or complaints.
- (0) IH program activities are not performed.

Comments: _____

5. IH program regulatory requirements are interpreted, understood, and communicated properly.
(29 CFR 1910)

(4) An effective process is in place for interpreting and communicating all regulatory requirements which considers and addresses the needs of the SNL/NM line customer.

(3) A process is in place for interpreting and communicating all regulatory requirements which attempts to address the needs of the SNL/NM line customer.

(2) Some regulatory requirements are interpreted and communicated by individuals autonomously.

(1) Some interpretations of regulatory requirements are arbitrary and capricious. Interpretations are communicated by mechanisms which are not understood.

(0) Regulatory requirements are not interpreted.

Comments: _____

6. IH program documentation (IH documentation internal to the IH program-Sub programs, SOPs, & OPs)

(4) IH program documentation is understandable, useable and accessible to all IH staff and can withstand third party scrutiny.

(3) IH program documentation is understandable, useable, and accessible to all IH staff.

(2) IH program documentation is accessible but is not used or understood by the majority of the IH staff.

(1) IH program documentation is outdated and is not easily accessible.

(0) IH program documentation does not exist.

Comments: _____

7. IH program communication to the line
(Chapter 6 of the ES&H Manual)

- (4) IH program documentation is current, understandable and useable by the line and can withstand third party scrutiny.
(3) IH program documentation is current, understandable and useable by the line.
(2) IH program documentation is outdated, but is understandable and useable by the line.
(1) IH program documentation is outdated and is not understandable or usable by the line.
(0) IH program is not documented.

Comments: _____

8. IH hazard recognition and evaluation
(occupational exposure assessment)

- (4) An IH process is in place for identification and prioritization of IH hazards in the workplace. Data collected is retrievable and useable by the IH program.
(3) An IH process is in place for identification and prioritization of IH hazards in the workplace.
(2) An IH process is in place for identification of IH hazards in the workplace.
(1) IH hazards are identified in a random manner.
(0) IH hazards are not identified.

Comments: _____

9. IH hazard control
(IH hazards are controlled to an acceptable level of risk)

- (4) IH hazard controls are fully in place; IH hazards are controlled by the use of engineering controls.
(3) IH hazard controls are fully in place with priority given to engineering controls, safe work procedures, administrative controls, and personal protective equipment (in that order).
(2) IH hazard controls are fully in place; but the order of priority is variable.
(1) IH hazard controls are generally in place; but the priority and completeness varies.
(0) IH hazard control is incomplete and ineffective.

Comments: _____

**10. Customer support
(IH staff skills and training)**

(4) All IH staff are competent and trained in technical IH and customer service skills and these skills are sized to meet the needs of line organization customers.

(3) The majority of IH staff are competent and trained in technical IH skills and these skills are sized to meet the needs of line organization customers.

(2) Some of the IH staff are competent in technical IH skills and the size of these skills to meet the needs of line organization customers is unknown.

(1) IH staff are average in technical IH skills and marginally meet the needs of line organization customers.

(0) IH staff are below average in technical IH skills and do not meet the needs of line organization customers.

Comments: _____

**11. Customer support
(Line customer service)**

(4) The majority of IH staff seek customer input on ways of making it easier for them to do business with the IH program and respond to customer's needs in a proactive manner.

(3) The majority of the IH staff are responsive to customers' needs in a proactive manner.

(2) The majority of the IH staff are responsive to customers' needs in a reactive manner.

(1) Some IH staff are responsive to customers' needs in a reactive manner.

(0) IH staff are not responsive to customers' needs.

Comments: _____

**12. IH program review
(Communication-external
customers)**

- (4) SNL/NM line management values and uses IH program work to help with the success of the Laboratories.
- (3) The majority of SNL/NM line management know the scope of IH program work and how this work helps with the success of the Laboratories.
- (2) Some SNL/NM line management know the scope of IH program work and how this work helps with the success of the Laboratories.
- (1) A few SNL/NM line management know the scope of IH program work and how this work helps with the success of the Laboratories.
- (0) SNL/NM line management do not know the scope of IH program work.

Comments: _____

**13. IH program review
(Communication-internal to
7500)**

- (4) SNL/NM 7500 management values and uses IH program work to help with the success of the Center.
- (3) The majority of SNL/NM 7500 management know the scope of IH program work and how this work helps with the success of the Center.
- (2) Some SNL/NM 7500 management know the scope of IH program work and how this work helps with the success of the Center.
- (1) A few SNL/NM 7500 managers know the scope of IH program work and how this work helps with the success of the Center.
- (0) SNL/NM 7500 management do not know the scope of IH program work.

Comments: _____

**14. IH program review
(quality control)**

(4) Processes are in place which allow for technical review of IH program and line support work and all IH staff use and accept the processes as documented.

(3) A process is in place which allows for technical review of IH program and line support work and the majority of staff use and accept the processes as documented.

(2) A process is in place which allows for technical review of IH program and line support work and some of the staff use and accept the processes as documented.

(1) A process is in place which allows for technical review of IH program and line support work; a few of the staff use and accept the processes as documented.

(0) No technical review processes are in place.

Comments: _____

**15. IH program review
(quality assurance)**

(4) In addition to a comprehensive annual review, an internal process is used which drives continuous improvement.

(3) A comprehensive review is conducted at least annually and drives appropriate program modifications.

(2) A program review is conducted, but does not appear to drive all necessary program changes.

(1) Program review and changes in programs are driven by events such as accidents or audit activity.

(0) There is no evidence of any program review process.

Comments: _____

16. Program review
(IH staff participation - IH staff
involvement in the IH program)

- (4) All IH staff have ownership in the IH program and can identify and resolve IH issues.
(3) Majority of IH staff believe they have a positive impact on identifying and resolving IH issues.
(2) Some of the IH staff believe they have a positive impact on identifying and resolving IH issues.
(1) IH staff frequently believe that their IH program input will be considered by management.
(0) IH staff involvement in IH issues is not encouraged or rewarded.

Comments: _____

WORKSHEET SCORING

Sum the scores for each performance measure (the circled choice). Since there are 16 elements, the result needs to be normalized by multiplying by 1.56 to achieve a score based on a 100 point scale. Once the number is normalized it should be rounded. Fractions greater than 0.5 should be rounded up and fractions less than or equal to 0.5 should be rounded down.

FINAL SCORE

Σ of scores = _____ X 1.56 = _____

This worksheet was developed using the following resources:

1. Patty's Industrial Hygiene and Toxicology, Vol. 111A, Theory and Rationale of Industrial Hygiene Practice: the Work Environment, John Wiley & Sons, Inc., New York, New York, 1985, p. 16.
2. Garret, Jack T., Cralley, Lewis J., Cralley, Lester V., eds., Industrial Hygiene Management, John Wiley & Sons, Inc., New York, New York, 1988.
3. Occupational Health and Safety Administration, Safety and Health Program Assessment Worksheet, 1995. (Based on the 1989 OSHA Safety and Health Program Management Guidelines)
4. Brief, Richard S., "Benefit Versus Cost-A Tool for Industrial Hygiene Management" American Industrial Hygiene Association Journal 50(6):289-292 (1989).
5. Various draft program documents from the ES&H Oversight Pilot Project, 1995 & 1996.
6. Clayton, George D., Clayton Florence E., eds., Patty's Industrial Hygiene and Toxicology, 4th ed., Vol. 1, Part A, John Wiley & Sons, Inc., New York, New York, 1991.
7. Bell, Chip R., Zemke, R., Managing Knock Your Socks Off Service, American Management Association, New York, New York, 1992.
8. United States Department of Energy, How to Measure Performance: A Handbook of Techniques and Tools, 1995.
9. Arthur D. Little, Next Generation Environmental, Health, and Safety Management, 1996.
10. Malcolm Baldrige National Quality Award, Award Criteria, 1996.
11. Sandia National Laboratories, The Sandia President's Quality Award, 1996.
12. Leibowitz, Alan J., ed., Industrial Hygiene Auditing: A Manual for Practice, American Industrial Hygiene Association, Fairfax, VA, 1994.

ATTACHMENT 13

Senior Management Representative Training on Emergency Management Decision Making Processes.

CLASSROOM ROSTER

Page 1 of 3

Course #	
Title of Course	<u>State of Oregon / Non-Resident Training</u>
Attendance Certified by	<u>William W. Smith</u>
Name	
Date	

Name: <u>MIKE NIELSEN</u>	Date: <u>12-4-97</u>
SS#: <u>555-72-9847</u>	Time of Class: <u>8-12</u>
MS# <u>0936</u>	Location: <u>C.C.</u>
Org.# <u>7841</u>	
Signature: <u>Mike Nielsen</u>	

Name: <u>Kent McIntire</u>	Date: <u>12/4/97</u>
SS#: <u>519-38-7355</u>	Time of Class: <u>8-12</u>
MS# <u>1086</u>	Location: <u>CC</u>
Org.# <u>7401</u>	
Signature: <u>D. McIntire</u>	

Name: <u>Doug Bloomquist</u>	Date: <u>12/4/97</u>
SS#: <u>519-60-0630</u>	Time of Class: <u>8-12</u>
MS# <u>1182</u>	Location: <u>CC</u>
Org.# <u>9536</u>	
Signature: <u>D. Bloomquist</u>	

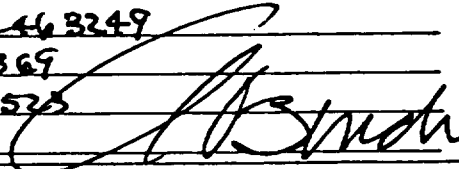
Name: <u>Melecita Archuleta</u>	Date: <u>12-4-97</u>
SS#: <u>525-15-3555</u>	Time of Class: <u>8-12</u>
MS# <u>1094 (?)</u>	Location: <u>CC</u>
Org.# <u>7575</u>	
Signature: <u>Melecita Archuleta</u>	

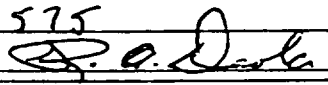
Name: <u>Paul Yourick</u>	Date: <u>12/4/97</u>
SS#: <u>383-70-6172</u>	Time of Class: <u>8-12</u>
MS# <u>1094</u>	Location: <u>CC</u>
Org.# <u>7524</u>	
Signature: <u>Paul Yourick</u>	

CLASSROOM ROSTER

Page 3 of 3

Course #		
Title of Course	SMR RETIREMENT/NOTIFICATION TRAINING	
Attendance Certified by	12/4/97	
Name	Date	

Name:	A.O. BENDURE	Date:	12/4/97
SS#:	492463249	Time of Class:	
MS#:	0369	Location:	
Org. #:	7525		
Signature:			

Name:	R.A. Dade	Date:	12/4/97
SS#:	210 50 9683	Time of Class:	8-12
MS#:	0854	Location:	Cornell Club
Org. #:	7575		
Signature:			

Name:		Date:	
SS#:		Time of Class:	
MS#:		Location:	
Org. #:			
Signature:			

Name:		Date:	
SS#:		Time of Class:	
MS#:		Location:	
Org. #:			
Signature:			

Name:		Date:	
SS#:		Time of Class:	
MS#:		Location:	
Org. #:			
Signature:			

Emergency Management Decision Making

Emergency Management: Decision Making

Events Leading To The Development Of This “Course”

**Hanford PFP (Plutonium Finishing Plant)
Explosion on May 14, 1997.**

2

7:53 pm May 14, 1997 explosion in the Hanford Plutonium Finishing Plant.

Several individuals notice or felt the explosion - shift manager, operating engineer and security guard .

Results of this incident

- **Explosion affected property and worker health**
- **Emergency identification**
- **Emergency decision making**
 - failures and short comings

Emergency Decision-Making Environment

- **Events and decisions are often outside the direct experience of the decision-maker**
- **Decisions may be outside the normal level of authority exercised by the decision maker**
- **The decisions carry significant and immediate consequences**
- **Imminent danger to health, safety, environment, and/or property may be present**

Emergency Decision-Making Environment

Continued

- Time constraints on decisions are often inflexible or under outside control
- The information gathered may be incomplete, unverified, or wrong
- Decisions must often be made rapidly in an environment full of high stress

Characteristics of Effective Emergency Management Decision-Making

- Are the authority and responsibility for decision-making are clearly defined?
- Is incomplete, inaccurate, or uncertain information can be detected and discarded?
- Are inappropriate decisions detected and corrected?
- Is each decision and its objectives clearly understood and communicated?

Characteristics of Effective Emergency Management Decision-Making

Continued

- Can a decision be made within the time available to take effective action?
- Is the decision "Conservative" in structure?

Conservative

- **Tending to maintain existing view.
conditions or institutions: Traditional**
- **Marked by moderation or caution**

•

Characteristics of Effective Emergency Management Decision-Making

Continued

- Can a decision be made within the time available to take effective action?
- Is the decision “Conservative” in structure?
 - “Conservative”: protection of human health and safety, the environment, and property.
 - The degree of “Conservatism” depends on the availability and reliability of information and stability of the emergency situation.

Operational Emergencies

"unplanned, significant events or conditions that require time-urgent response from outside the immediate affected site or facility."

Operational Emergencies

Continued

- **An Operational Emergency may cause or have the potential to cause:**
 - **Serious health and safety impacts to workers or the public**
 - **Direct harm to people or the environment as a result of degradation of security or safeguards conditions**
 - **Loss of control over hazardous materials**

Which Emergencies Require Classification

Actual or potential release of significant quantities of hazardous materials to the environment may need to be classified if:

- **Release is outside a structure or enclosure**
- **The material threatens those nearby and may affect people outside the immediate vicinity**
- **The rate of transport in the environment requires time-urgent response to implement protective actions.**

Why Classify Hazardous Materials Emergencies?

Classification is intended to:

- **Trigger a set of predetermined response actions appropriate to all events of a given severity level (notification, mobilization of resources, protective actions)**
- **Activate analysis and technical support capabilities to help determine need for other actions**
- **Enhance the likelihood that mitigative actions will be taken to prevent conditions from becoming more severe**

13

Classifying an event as an Alert, Site Area Emergency, or General Emergency should automatically trigger actions to:

- **Notify key onsite organizations and points of contact**
- **Notify the DOE chain of command and offsite response agencies -Activate or alert needed or potentially needed onsite and / or offsite response resources**
- **Take predetermined protective actions**

Classification Decisions

Predetermined Protective Actions

Facility-specific EALs (Emergency Action Levels)

- **Classification decision-making is straight forward with good, applicable EALs**
 - **IF the EAL is “met” then declare an EMERGENCY**

Classification Decisions

**In some situations, facility-specific EALs
MAY NOT lead to a classification decision:**

- **Hazardous material not addressed in Facility Hazard Assessment.**
- **There is no EAL for the observed event or release mode.**
- **Indications/Observations needed to apply (EAL are missing, obscure, or misleading)**

15

NOTE: This may be due to oversight or because the quantity of a particular material did not exceed the screening threshold for inclusion in the hazards assessment.

**If Your Facility-Specific EALs DO
NOT Lead to a Classification Decision**

You can't wait - it is vital to:

- **Classify the event**
- **Avoid *paralysis by analysis***
- **Be "Conservative"**
- **Take action within short time allowed**

If Your Facility-Specific EALs DO NOT Lead to a Classification Decision

Continued

- **Tactics to use**
- **Not an alternate for EALs**
- **Use ONLY as a last resort**

17

If Your Facility-Specific EALs DO NOT Lead to a Classification Decision

- **Tactics to use if your EALs do not help lead you to a decision**
- **Not intended as an alternate to use of EALs as a classification approach**
- **Use ONLY as a last resort**

If Your EALs DO NOT Lead You to a Classification Decision

**Tactic #1. Classify according to the symptoms
and emergency class definitions**

- **Observed release of hazardous materials**
- **Measurement results in the environment**
- **Effects on people**

18

If Your EALs DO NOT Lead You to a Classification Decision

**Tactic #1. Classify according to the symptoms and emergency class definitions
(consequence vs. distance)**

- **Observed release of hazardous materials compared to others with known
consequence**
- **Measurement results in the environment**
- **Effects on people**

Emergency Class Definitions

ALERT

**Protective action criteria exceeded outside structures but not outside the
facility boundary (within ~100 m)**

SITE AREA EMERGENCY

**Protective Action Criteria exceeded beyond the facility boundary (~100 m) but
NOT beyond the site boundary.**

GENERAL EMERGENCY

Protective Action Criteria exceeded at or beyond the site boundary.

If Your EALs DO NOT Lead You to a Classification Decision

Continued

Tactic #2. Classify at a level that will:

- **Trigger predetermined protective actions**
- **Augment the analysis capabilities to better understand consequences**
- **Activate the Emergency Response Organization**
- **Initiate timely notifications**

19

Tactic #2. Classify at a level that will:

- **Trigger predetermined protective actions for facility personnel and others nearby**
- **Augment the analysis capabilities to better understand consequences**
- **Activate the Emergency Response Organization to help stop or mitigate the release**
- **Initiate timely notifications to DOE and local authorities**

Because the typical hazard screening process makes use of generic screening quantities and is intended to identify the major hazards, it is always possible that an unanalyzed hazard may exist which, under some conditions, could cause the consequence threshold for an emergency requiring classification to be exceeded.

If you are taking one or several of these actions in order to respond effectively to an event, then this means that the event should probably be declared and operational emergency and classified.

If Your EALs DO NOT Lead You to a Classification Decision

Continued

Tactic #3. Use the "Judgment EAL"

- **Examine barriers - judge level of safety degradation:**
 - Health or safety consequences?
 - Release or loss of control of hazardous material?
 - Damage to controls or barriers?
 - Inability to protect controls or barriers?
 - Inability to monitor status of controls or barriers?
 - Event or condition that could damage controls or barriers?

20

Tactic #3. Use the "Judgment EAL":

• **Examine barriers and judge level of safety degradation. Is it your judgment that the safety degradation will lead to:**

- Health or safety consequences?
- Release or loss of control of hazardous material?
- Damage to controls or barriers?
- Inability to protect controls or barriers?
- Inability to monitor status of controls or barriers?
- Event or condition that could damage controls or barriers?

This requires knowledge of the nature of the materials and the barriers and controls that keep them where they are supposed to be. Complex control and monitoring systems are most suitable for development of "tiers" of EALs to classify events based on the level of safety degradation.

There is a place in every EAL set for a "Judgment EAL", with the unambiguous authority and responsibility to apply it.

If Your EALs DO NOT Lead You to a Classification Decision

Tactic #4. As a last resort, default to the maximum classification for that facility or hazard.

- **Assume any unanalyzed hazard is not likely to exceed effects of the maximum analyzed hazard**
- **Ensure maximum protective response.**
- **Allows for lack of understanding of the cause of the event and the potential for it to escalate in severity**
- **VERY "Conservative" approach**

21

Tactic #4. As a last resort, default to the maximum classification for that facility or hazard type (radiological or non-radiological)

- **Assume any unanalyzed hazard is not likely to exceed effects of the maximum analyzed hazard**
- **Ensures the maximum protective response.**
- **Makes allowance for lack of understanding of the cause of the event and the potential for it to escalate in severity**
- **This is a VERY conservative approach**

Applying "Judgment" to Classification

- An understanding of how an EAL is developed is important in applying judgment.
- Postulated Failure of Barrier

22

What is the inventory of the facility? Determine what the hazards are and how serious each of them are in their various states then what problems can each of them cause.

Applying "Judgment" to Classification

Some rules of thumb:

- If there is high likelihood that the conditions will produce a hazardous release with a few hours, **DECLARE.**
- If there is a significantly elevated (above normal) likelihood of a hazardous release and health and safety consequences would be severe, **DECLARE.**
- If classifying would / could help reverse the safety degradation, **DECLARE.**

If In doubt Tell the world that you have an

EMERGENCY

Protective Action Decisions

25

How Do We Make Initial Protective Action Decisions?

Initial protective action decisions should be predetermined and directly linked to facility specific EALs

- **IF the EAL is satisfied THEN initiate predetermined protective actions**

•An example: A Site Area Emergency is declared based on an EAL for radioactive release from a facility stack.

•The predetermined, linked protective action is: "Shelter all people in downwind sectors out to 2.5 miles."

•Remember, this discussion applies to initial protective action decisions - when results and recommendations from your Consequence Assessment Team are not available. If event-specific results ARE available from your Consequence Assessment team, use them instead!

Protective Actions: Definition and Objective

Protective actions are:

- **Actions (evacuation, sheltering, or protective clothing) used to prevent or minimize potential health and safety impacts on workers, responders or the general public.**

The Effects of Protective Action Decisions

- **Activate onsite and offsite resources.**
- **Produce protective actions, such as sheltering or evacuation, for workers and responders.**
- **Produce Protective Action Recommendations for agencies responsible for public welfare.**
- **Prevent or minimize potential health and safety impacts.**
- **Produce controlled, rather than spontaneous protective actions.**

Keep in mind that protective actions will also disrupt the normal activities of workers, responders, and onsite organizations

Rules of Thumb for Conservative Protective Actions

LIKELY to exceed protective action criteria:

- **SHELTER IN PLACE** unless the following conditions are met.
- **ONLY EVACUATE** if it can be accomplished before the plume arrives, adequate protective gear is available for evacuees, and other factors do not impose a high risk for evacuation.
- **ONLY EVACUATE** if sheltering areas are being directly impacted by the plume (the plume has gotten indoors).

• Other factors that may impose a high risk for evacuation include:

- A security threat (such as terrorist act)
- Unsafe facility / site conditions (such as falling buildings)
- Unsafe weather conditions (such as hurricane, tornado, blizzard)
- Special needs or conditions of personnel (such as medical clinic)

A plume will eventually infiltrate an indoor sheltering area if the plume persists at the location long enough. A plume is indoors at significant concentrations if moderate to severe symptoms start to show up in the sheltering area, such as respiratory distress or throat pain in a chemical event, or rising radiation levels in a radiological event.

Rules of Thumb for Conservative Protective Actions

In areas that may **POSSIBLY** exceed protective action criteria:

- **SHELTER IN PLACE** either throughout the areas or in selected portions (e.g., closest proximity to event) unless the following condition is met.
- **EVACUATE** on a precautionary basis if it can be accomplished easily (e.g., few persons affected), resources are available, and other factors do not impose a high risk for evacuation.

Rules of Thumb for Conservative Protective Actions

In areas that are **UNLIKELY** to exceed
protective action criteria:

- **NOTIFY** personnel and/or offsite agencies
of the event and status and prepare for
precautionary protective actions should the
situation change.

If Pre-determined Protective Actions Are Not Available for a Specific Event:

**You can't wait - it is vital to protect workers and the public
within the short time allowed**

- **It is vital to avoid "paralysis by analysis"**
- **It is vital to act conservatively**
- **Tactic(s) to use if pre-determined protective actions are not applicable**
- **Not intended as an alternate to pre-determined protective actions**
- **Use this approach ONLY if you have examined your pre-determined protective actions and they don't apply**

Remember, this discussion applies to initial protective action decisions - when results and recommendations from your Consequence Assessment Team are not available. If event-specific results ARE available from your Consequence Assessment team, use them instead!

If In doubt Tell the world that you have an
EMERGENCY

- What else can we do for **YOU????**

ATTACHMENT 14

Guidelines for Executive Notification

Guidelines for Executive Notifications

(September 4, 1997)

The following are guidelines for the types of information that SNL and Lockheed Martin Corporation (LMC) management should be apprised of promptly. This must be done as quickly as possible to assure they are notified of all potentially embarrassing and/or noteworthy occurrences, accidents and incidents.

A. Sandia National Laboratories (SNL) Management

The Emergency Operations Center (EOC) Coordinator or Incident Commander will notify the Integrated Risk Management Department Manager of all reportable occurrences or incidents that fall into the categories listed below. The On Duty Senior Management Representative (SMR) will be responsible for notifying the 7500 Director, who will then notify the Vice President of 7000. In the event that the 7500 Director is not available, the SMR will contact the 7000 Vice President. The SMR will also contact the Center 12100 Executive Staff Director, who will be responsible for making the appropriate notifications to SNL Executive Management.

The types of occurrences/accidents/incidents requiring notification to the "SNL Contacts" below are:

1. Any DOE reportable occurrence categorized as "unusual" or "emergency." (7500 Director, and subsequently Division 7000 Vice President, must be contacted immediately.)
2. Any DOE reportable occurrence categorized as "off-normal" in the following categories:
 - a. radiological contamination or exposure of a person,
 - b. explosive safety,
 - c. high voltage electrical, except simple power outages, and
 - d. job-related accident or injury that cannot be treated at Sandia's clinic and therefore requires transportation and admittance to a hospital.
3. Any occurrence or incident that generates significant outside interest by the media or within DOE.
4. Any occurrence or incident which involves significant political, financial, public relations, or programmatic risk for the Laboratories. (Also reportable to LMC.)

SNL Contacts					
Title	Name	Office	Home	Pager	Cell Phone
7500 Director	Tom Blejwas	845-9296	294-2057	142-3559	N/A
Division 7000 Vice President	M. Lynn Jones	845-8368	867-2022	142-2820	N/A
Center 12100 Executive Staff Director	Ron Detry	284-3191	856-2999	1-800-SKY-8888 (Enter PIN# 1104605)	235-5118

If the situation requires notifications to executive management see table below:

SNL Executive Management Notifications					
Title	Name	Office	Home	Pager	Cell Phone
Executive Vice President	John Crawford	844-4531	323-9511	1-800-505-2393	N/A
SNL President	C. Paul Robinson	844-7261	856-5311	1-800-SKY-8888 (PIN# 1254468; Enter 1, then your phone #)	263-0059

**B. Lockheed Martin Management
Emergency Reporting:**

Lockheed Martin Corporate ES&H shall be immediately informed in the event of the following environmental, safety or health related incidents:

1. A worker-related fatality or serious injury (injury requiring hospitalization for other than observation) to a Lockheed Martin employee;
2. A fatal or serious injury to a non-employee occurring at a facility owned, leased, or operated by Lockheed Martin;
3. An unpermitted environmental release meeting or exceeding reportable quantity levels as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); or
4. Any ES&H incident that is likely to generate significant publicity or an adverse situation for the Corporation (e.g., alleged releases of contaminants beyond property boundaries, purported fish or wildlife impacts, allegations of adverse community health or property impacts, etc.).

All incidents described in the above paragraphs shall initially be reported to LMC Corporate ES&H by Sandia's 7500 Director or designated alternate using the emergency reporting phone line listed below. In the event that the 7500 Director and alternate are unavailable, the Division 7000 Vice President will do this reporting.

Written reports containing the applicable information listed in Attachments 1-3 (usually the occurrence report) shall be sent via fax to the LMC Corporate ES&H number listed below within one (1) working day of the occurrence. Information not immediately available shall be sent to LMC Corporate ES&H in subsequent correspondence as it becomes available.

If the occurrence/accident/incident involves a serious or fatal injury as described in Items B.1. and B.2., the 7500 Director shall notify the LMC E&E Sector Office listed below (Vice President-Technical Operations and ES&H, Everet Beckner). If the 7500 Director is unavailable, the 7000 Vice President will do this reporting also.

Lockheed Martin Management Notifications		
Title	Name	Office
Corporate ES&H Emergency	Everet (Ev) Beckner	1-800-366-3497
E&E Sector Vice President- Technical Operations and ES&H		1-303-971-5056 FAX 843-4038, 843-4028 FAX
Corporate Director of Safety & Health, Environmental Affairs	Jay Hummer	1-303-971-1994 1-303-971-5056 (Fax)

C. Non-Emergency Reporting:

LMC Corporate ES&H collects information related to ES&H activities at Lockheed Martin companies for various reasons, including the following:

- To evaluate regulatory enforcement trends;
- To understand and evaluate company and Corporate environmental risk in a timely manner;
- To provide support where issues encountered by individual companies may have Corporate-wide implications; and
- To identify adverse ES&H performance for prompt attention and correction.

The 7500 Director or Division 7000 Vice President shall notify the LMC Corporate Director, Environment, Safety and Health, within five (5) working days after any of the following events. Reports shall be in writing (even if a preliminary report was made verbally) and contain the applicable information listed in Attachments 2 & 3 (typically, an annotated copy of a report submitted to a regulatory agency will be sufficient).

1. Citations, Notices of Violation (NOV), Compliance Orders, and similar or related notices of enforcement from a regulatory agency and customer audit or inspection findings.
2. Mandatory or voluntary reports submitted to regulatory agencies such as exceedances, non-compliances, unpermitted releases, lost waste manifests, ES&H equipment failures or shutdowns and similar reports with enforcement implications. *(Note: Corporate ES&H is not interested in, for example, entire National Pollutant Discharge Elimination System (NPDES) monthly reports, but only in knowing when a NPDES permit exceedance has been reported; thus, a report to Corporate ES&H might simply state that the NPDES report for August showed one Total Suspended Solids and two pH exceedances and include the relevant information defined in Attachments 2 & 3).*
3. Customer direction or action which results in noncompliance with an ES&H law or regulation or a Corporate requirement.
4. Filing of an ES&H-related legal action against the company or by the company.
5. ES&H investigations or inquiries, from any party, that are other than routine (e.g., CERCLA 104(e) information requests from EPA, information requests from regulatory agencies or other public or private entities, escalated accident investigations, or requests for a Corporate position or statement on an ES&H matter).
6. Toxic Substances Control Act (TSCA) 8(c) notifications, 8(d) health studies, and 8(e) submittals.

If the emergency or non-emergency report is protected by the attorney-client privilege or attorney work product doctrine, the report shall be submitted directly to the Corporate Associate General Counsel, Environmental Law, or the Corporate Assistant General Counsel, Health and Safety.

The Sandia Media Relations Staff also provides a Daily Media Summary of current media issues. Should Sandia Media Relations Staff become aware of an incident through media inquiries, they will contact the Incident Commander as referred to in the Media Relations Emergency Response Guide. The Incident Commander shall initiate the proper notification(s) as prescribed in this document.

Line management has the responsibility to keep their management apprised of any potentially embarrassing/noteworthy situation well ahead of its becoming an issue with Sandia's customers, LMC, or the media.

Attachment 1

Fatalities and Serious Injuries Report

Name of facility:
Submitter's name, title, phone number:
Date and time of incident:
Detailed description of incident:
Names and affiliations of injured parties:
Medical status of injured parties:
Facility response to the incident:
Agency and/or media response:

For other pertinent information, please attach additional page(s).

Attachment 2

Spills and Releases Report

Name of facility:
Submitter's name, title, phone number:
Start and end date and time of incident:
Type and quantity of substance released:
Agency(ies) notified, dates and times:
Description of the root cause of the spill or release:
Impact of the release (who or what was adversely affected and how):
Results of sampling:
Names and affiliation of injured parties (employee or other parties):
Facility response to the incident (what was done to stop or mitigate the release, control the effect on employees, the public or the environment, and prevent reoccurrence):
Regulatory citation or permit clause that requires the notice:
System or component diagram depicting the incident and other pertinent background information (is useful):

For other pertinent information, please attach additional page(s).

Attachment 3

Reports to Regulatory Agencies

Name of facility:
Submitter's name, title, phone number:
Supply a copy of report submitted to agency
Identification of the requirement (permit limit, emission limit, regulatory citation, etc.) and the nature of the issue (e.g., measured parameter):
Date and time of event or issue:
Date and time agency(ies) notified:
Agency response (if any):
Other relevant facts such as prior history of similar incidents, inspections, exceedances, or equipment failure:
What has been done to correct the problem, control any potential effect on employees, the public or the environment, and prevent reoccurrence:

For other pertinent information, please attach additional page(s).